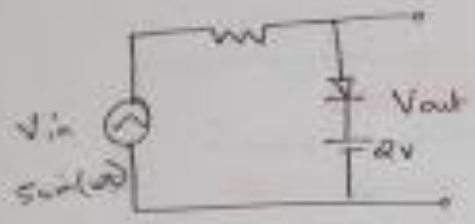
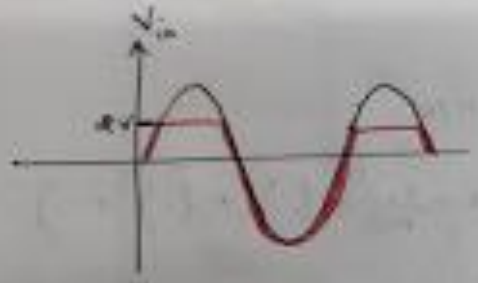
Clipper
Clipping → cutting the signal between a particular ~~range~~ range

Clamper → moving the signal up or down.

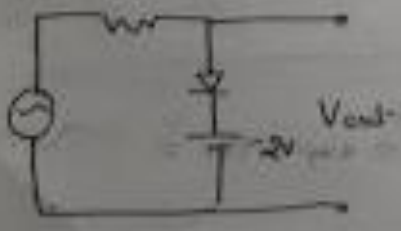
POSITIVE CLIPPER

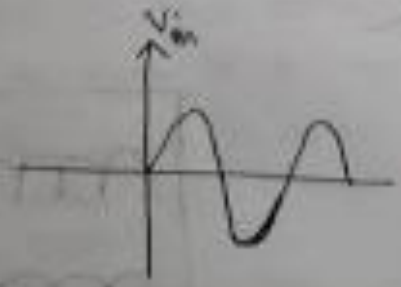


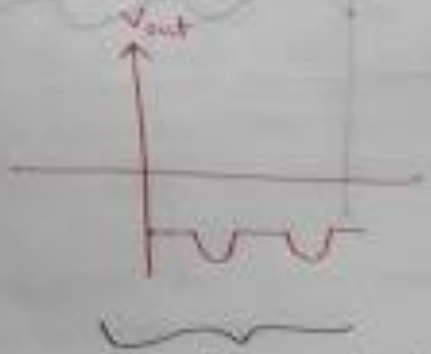
- at 1 V in V_{in}, diode is open so
- V_{out} will be whatever is V_{in}.
- same at 1.5 V, so $V_{out} = V_{in}$
- at 3V, diode is on. → for ideal diode, it is short circuit so V_{out} is 2V.
- for ideal, if $V_{in} > 2V$ then $V_{out} = 2V$



} positive clipper.



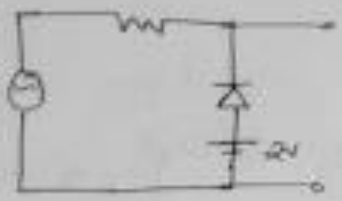


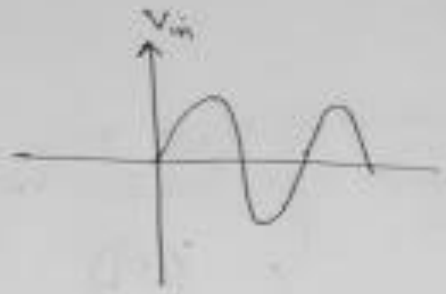


using -ve clipper.

as long as $V_{in} < -2$, open circuit so $V_{in} = V_{out}$
as long as $V_{in} > -2$, short circuit so $V_{out} = -2V$.

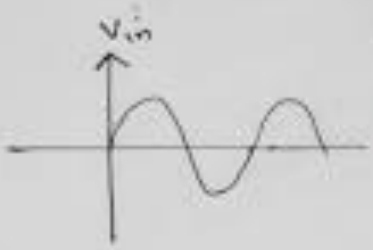
NEGATIVE CLIPPER

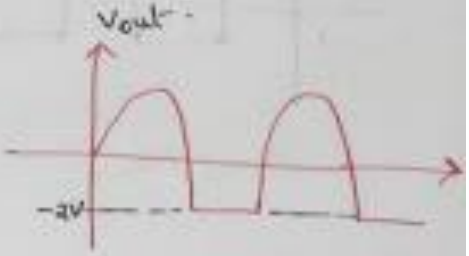




$V_{in} <= 2V$, short circuit so $2V$.

$V_{in} > 2V$, open circuit so $V_{in} = V_{out}$.





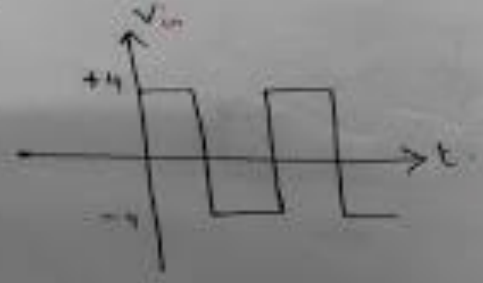
$V_{in} < -2V$, $V_{out} = -2V$

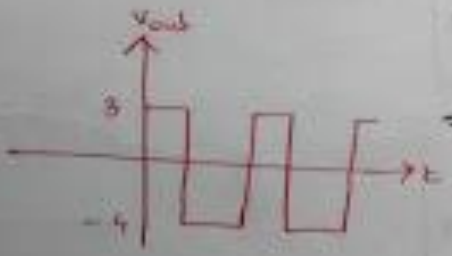
$V_{in} > -2V$, $V_{out} \sim V_{in}$

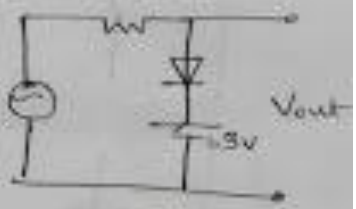
- limit 'er upore pass korte pare → negative clipper
- " " niche " " " → positive clipper.

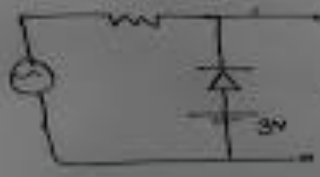
---

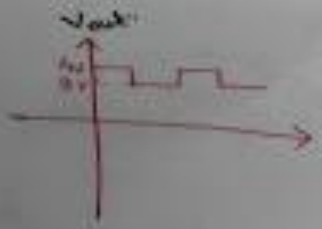
input

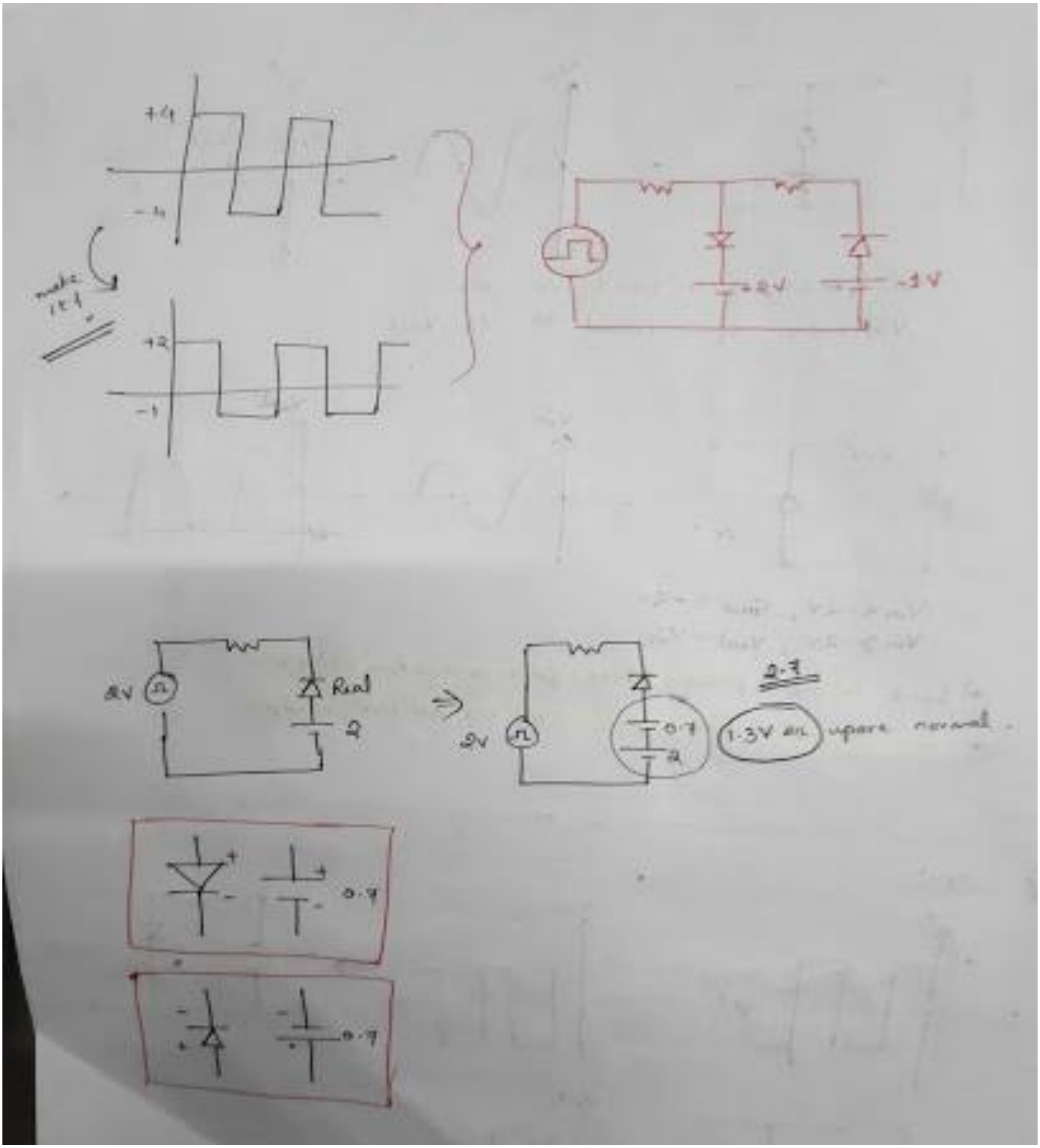




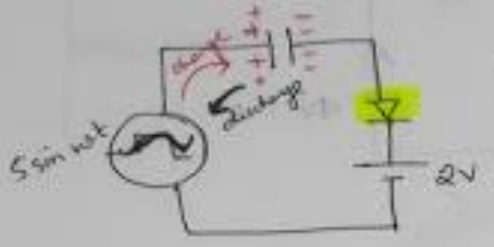






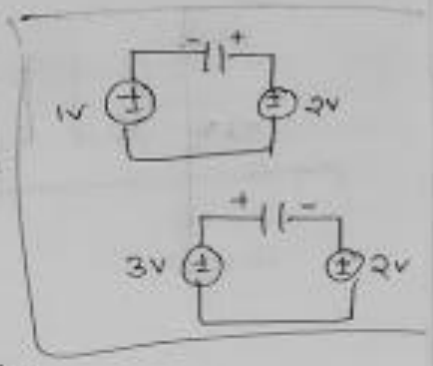

+4
-4
make it
+2
-1
+2V
-1V
2V
Real
2
2V
0.7
2
0.7
1.3V
0.7
0.7

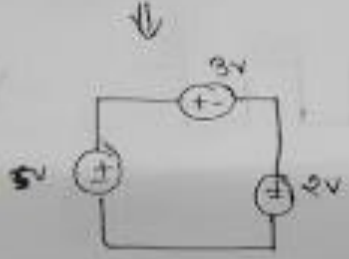
CLAMPER



/ at 3V, diode is ON, capacitor stores charge of 1V.

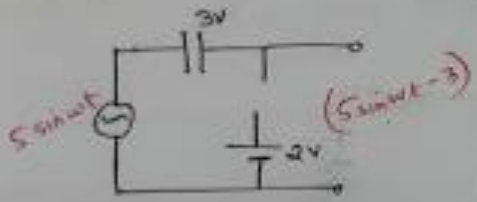
/ current cannot flow ↺ so capacitor will stay charged and the diode stays off.





negative clamper

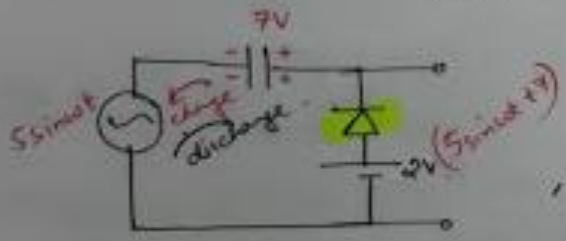
↳ upper peak becomes given Voltage



peak comes down to whatever is the value of voltage source.

/ open circuit because right ex 3+2=5V so $V_{in} \leq 5$

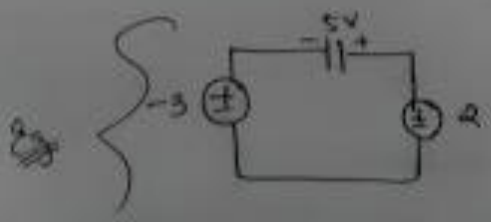
hole open circuit since diode does not allow current flow.

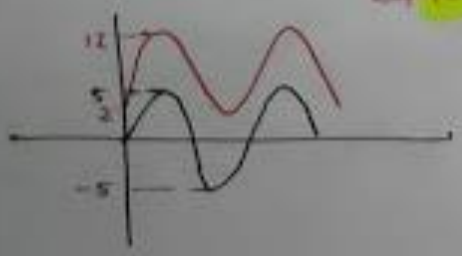


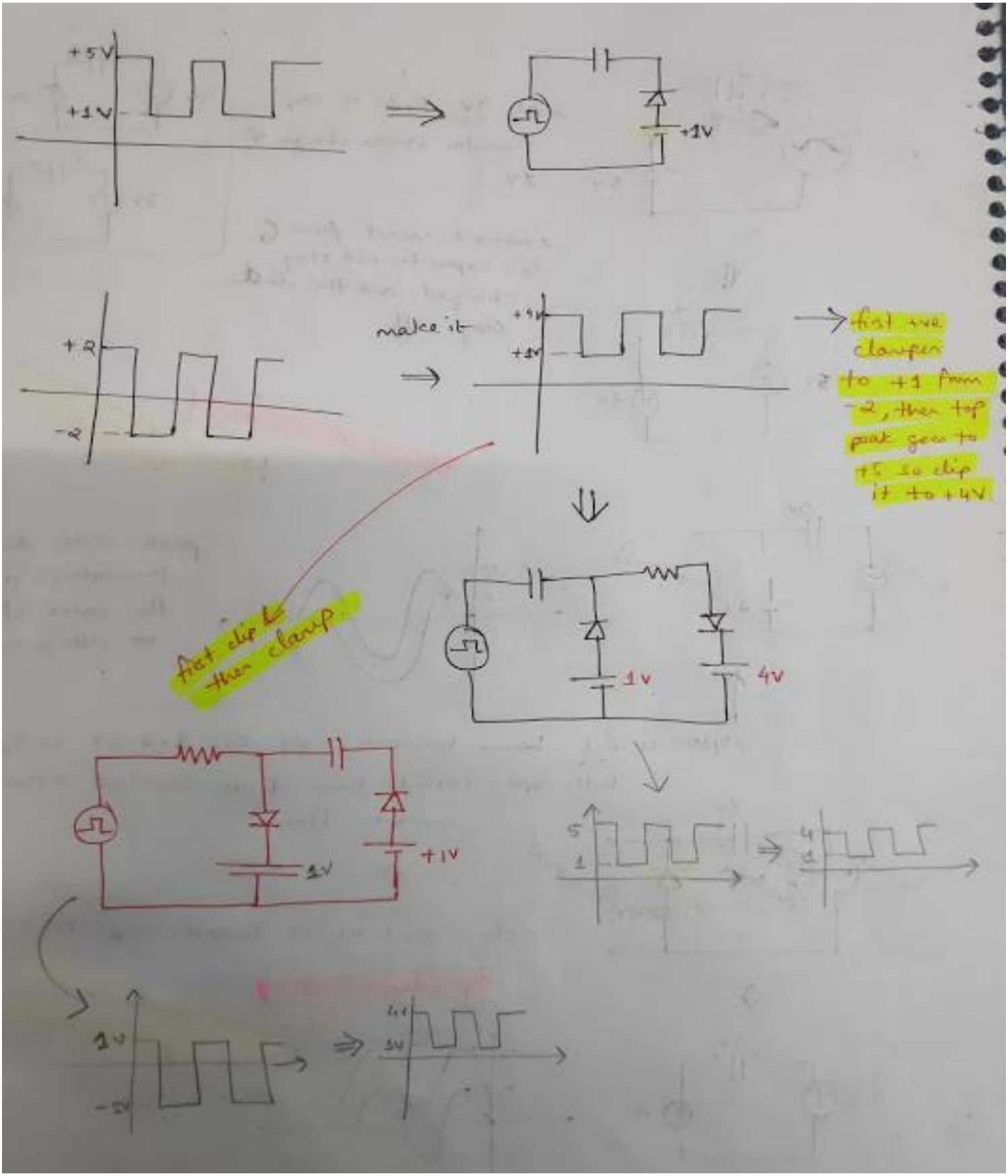
/ stays constant at 7V → the capacitor

positive clamper

↳ lower peak becomes given Voltage.






+5V
+1V
+1V
+2
-2
make it
+5V
+1V
first +ve clamper to +1 from -2, then top peak goes to +5 so clip it to +4V
first clip then clamp
1V
4V
+1V
1V
5
1
4
1
1V
-2V
4V
3V