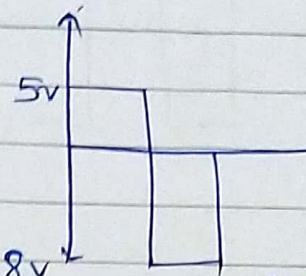
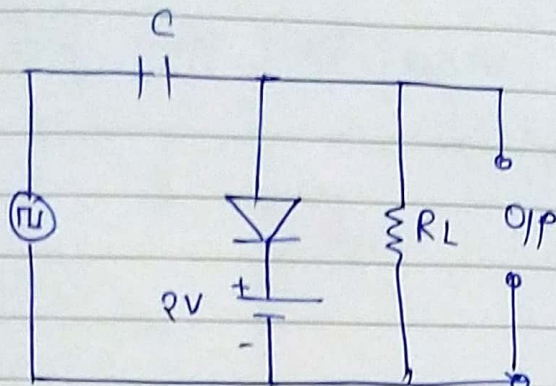


* Negative Biased clamper

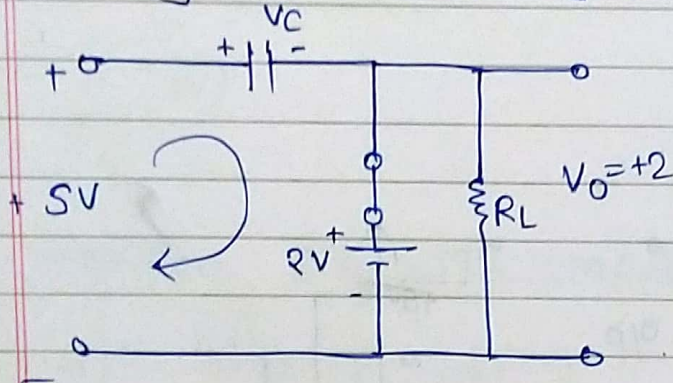
Saathi

Q.1



→ 1st consider that cycle, so that diode goes in forward bias.

i) During +ve half cycle



$$+5V - V_C - 2 = 0$$

$$V_C = 3V$$

$$-8 - 3 + V_O = 0$$

$$V_O = 11V$$

Apply KVL to inner loop.

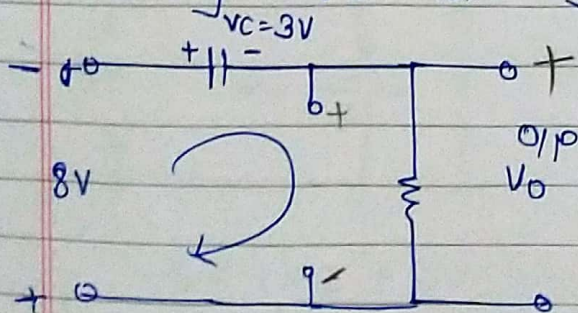
$$+5V - V_C - 2 = 0$$

$$V_C = 3V$$

output voltage during +ve half cycle is

$$V_O = 12V \quad V_O = V_L$$

ii) During -ve half cycle

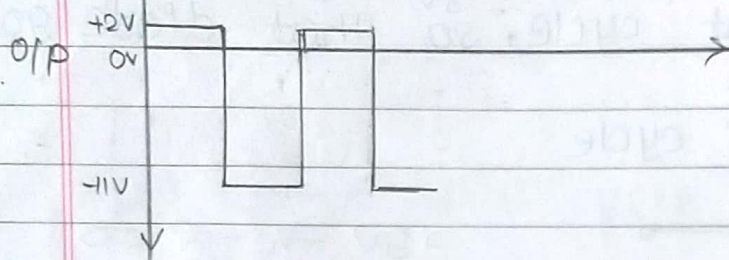
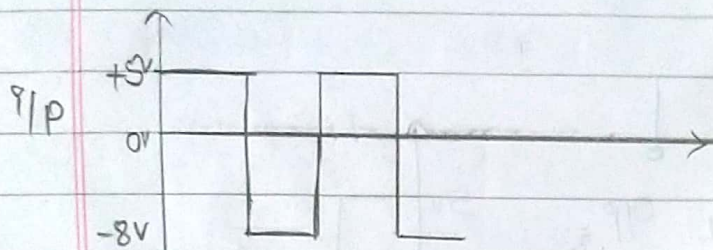


Applying KVL to outer loop.

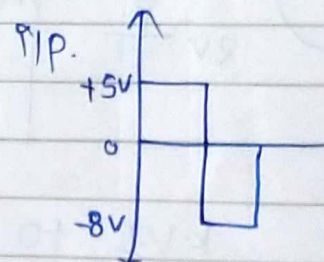
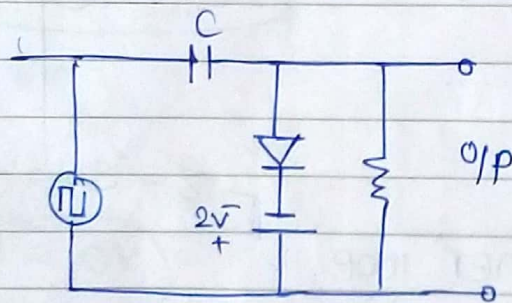
$$-8V - 3V - V_O = 0$$

$$V_O = -11V$$

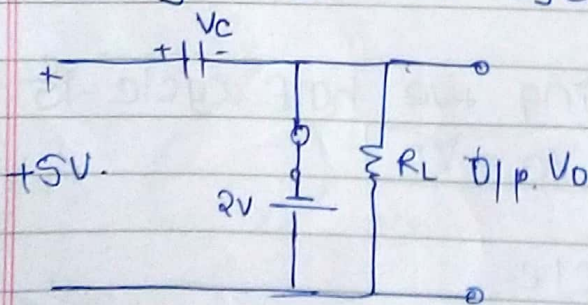
Date ___/___/___



Q.2



During +ve half cycle.



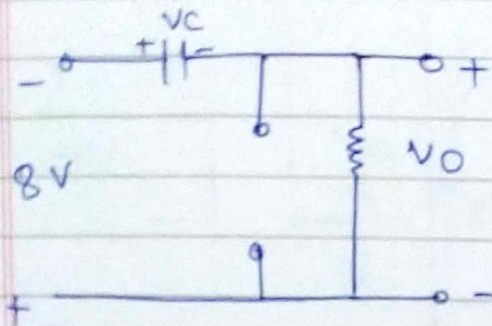
$$+5V - V_C + 2V = 0$$

$$V_C = 7V$$

$$V_O = -2V$$

Date / /

During -ve half cycle.

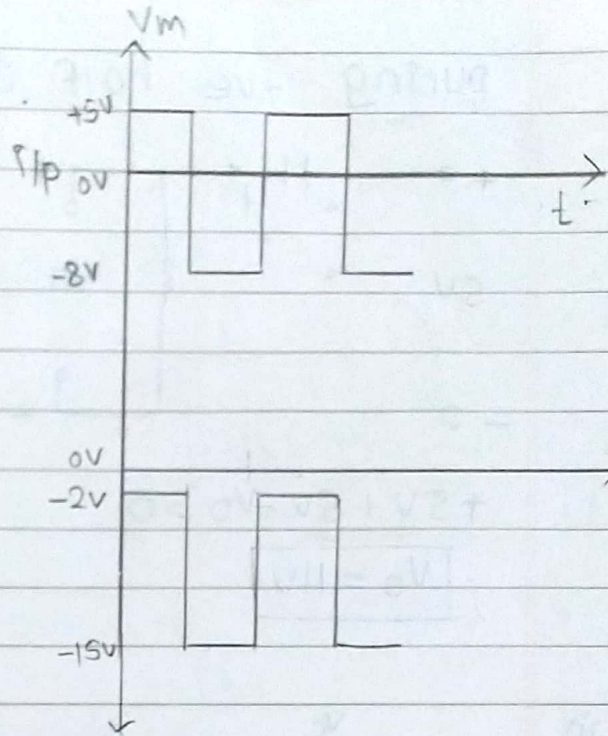


$$-8 - V_c - V_o = 0$$

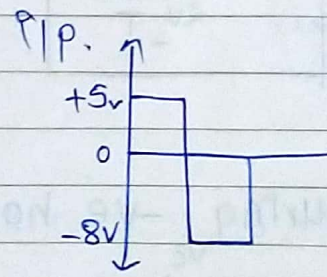
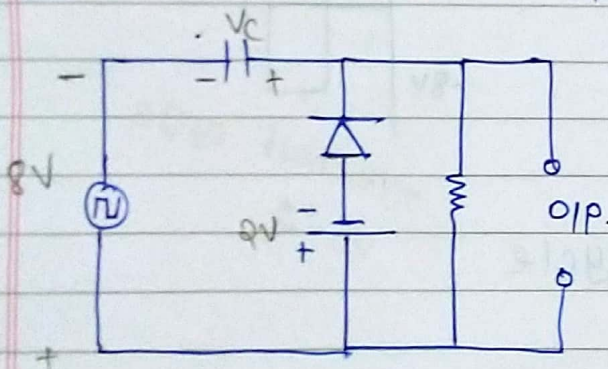
$$V_o = -15V$$

$$-8 - V_o = 0$$

$$V_o = -15$$

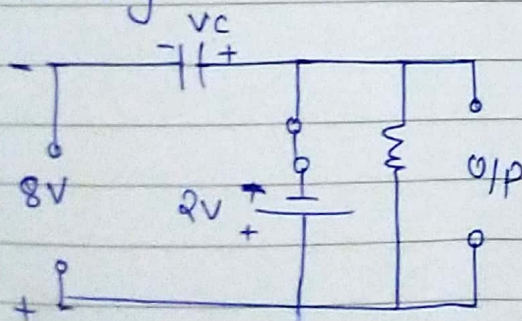


* positive biased clamper



-ve half cycle

During -ve half cycle



$$-8V + V_c + 2V = 0$$

$$V_c = 6V$$

$$V_o = -2V$$

$$-8V + V_c + 2V = 0$$

$$V_c = 6V$$

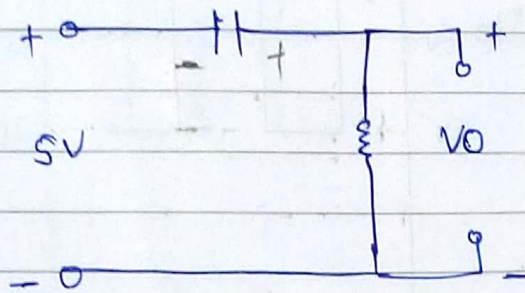
$$V_o = -2V$$

$$+5V + 6 - V_O = 0$$

$$V_O = 11$$

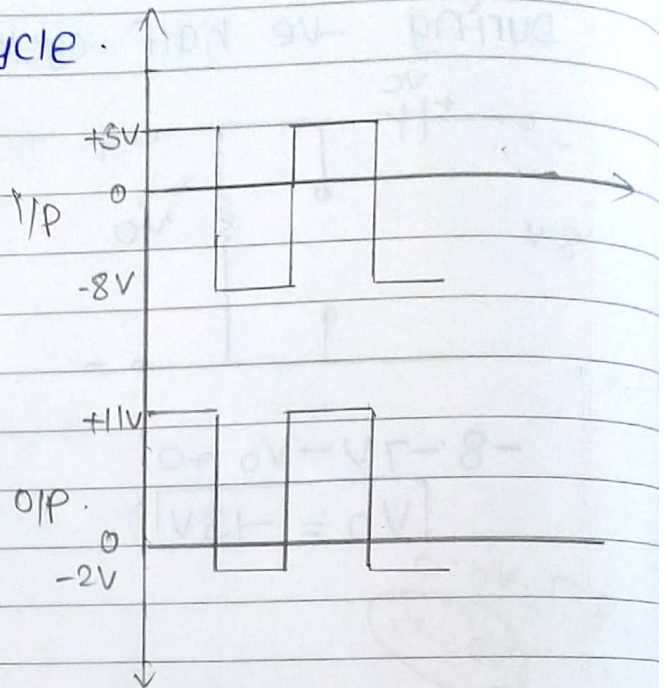
Saathu

during +ve half cycle.

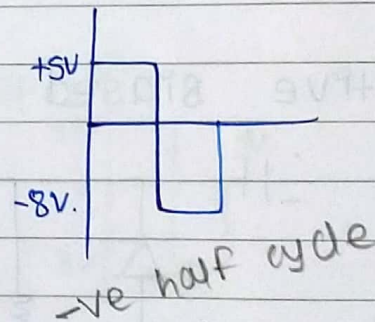
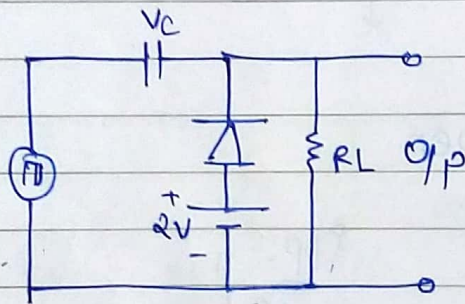


$$+5V + 6V - V_O = 0$$

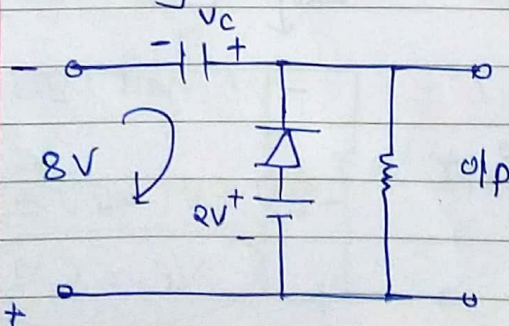
$$V_O = 11V$$



ii)



during -ve half cycle



$$-8V + V_C - 2V = 0$$

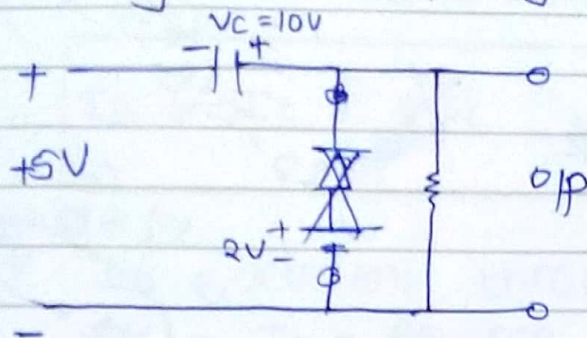
$$V_C = 10V$$

$$V_O = 2V$$

Scale

Date / /

during +ve half cycle



$$+5V + 10 - 2V_0 = 0$$

$$V_0 = +15V$$

