Name: Sifat Abdullah

ID: 19101384

Sec: 01

lab 02

Table 01

~~Input A~~

A	B	V_{OA}	V_{OB}	V_p	I_{R_1}	I_{R_2}	V_b	output
0	0	-0.67	-0.67	0.66	0.003	1.72×10^{11}	~~0.509~~ -0.509	5
~~5~~	~~0~~	4.32	-0.68	0.68	0.003	1.72×10^{11}	-0.49	5
~~0~~	~~5~~	-0.68	4.32	0.68	0.003	1.72×10^{11}	-0.49	5
5	5	2.79	2.79	2.21	0.002	0.003	0.867	0.124

Table 02

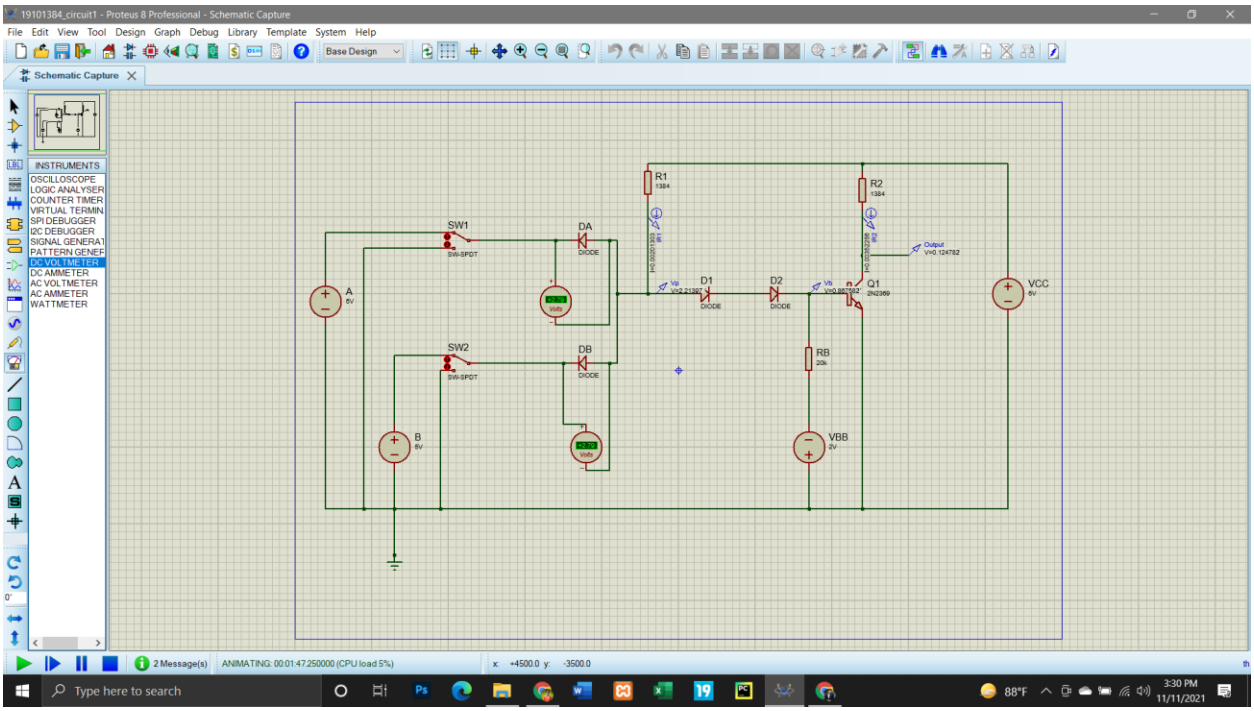
A	B	V_p	V_B	output
~~5~~	0	0.68	-0.49	5
~~5~~	~~5~~	2.21	0.867	0.124

(3) in the circuit it perform nand operation. as we know when both input is high the output will be low in nand and in our circuit we can see the same thing. This nand operation is being done because the transistor is in cutoff mode when

both, the output is not high. for that we are getting the same output. when both input is high the transistor is in saturation mode that why the output we are getting is low.

(4) when one input is high and other one is low the current flow is next to 0 in the transistor as the diode voltage is not enough to turn on the transistor so it will be in cutoff mode.

(5) from simulation if we take any of A or B as 5 volt ~~then~~ and the other as 1 V the output is still high. Anything more than that makes the output low.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VIRTUAL TERMIN
SPI DEBUGGER
I2C DEBUGGER
SIGNAL GENERA1
PATTERN GENEF
DC VOLTMETER
DC AMMETER
AC VOLTMETER
AC AMMETER
WATTMETER
SW1
SW-SPDT
DA
DIODE
A
6V
R1
1384
R2
1384
D1
D2
Q1
2N2369
VCC
5V
SW2
DB
RB
20k
B
6V
VBB
2V
2 Message(s)
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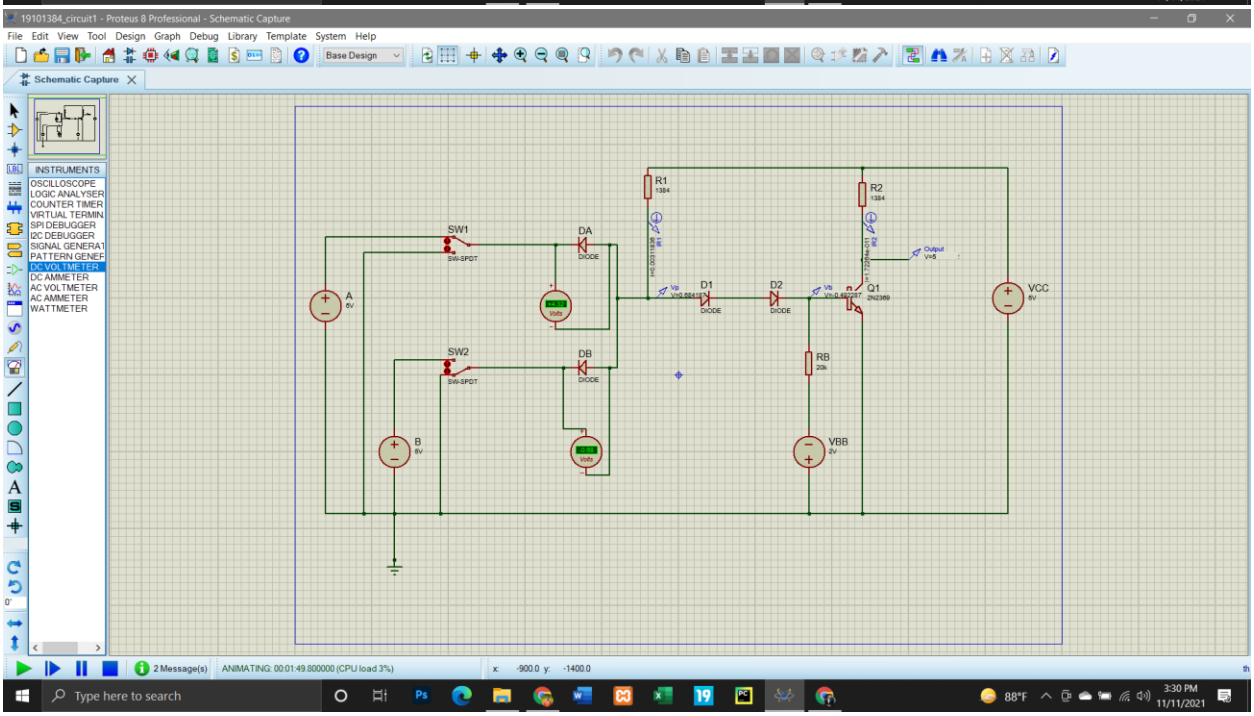
3:30 PM
11/11/2021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AC VOLTMETER
AC AMMETER
WATTMETER
SW1
SW-SPDT
DA
DIODE
A
6V
R1
1384
R2
1384
D1
D2
Q1
2N2369
VCC
5V
SW2
DB
RB
20k
B
6V
VBB
2V
2 Message(s)
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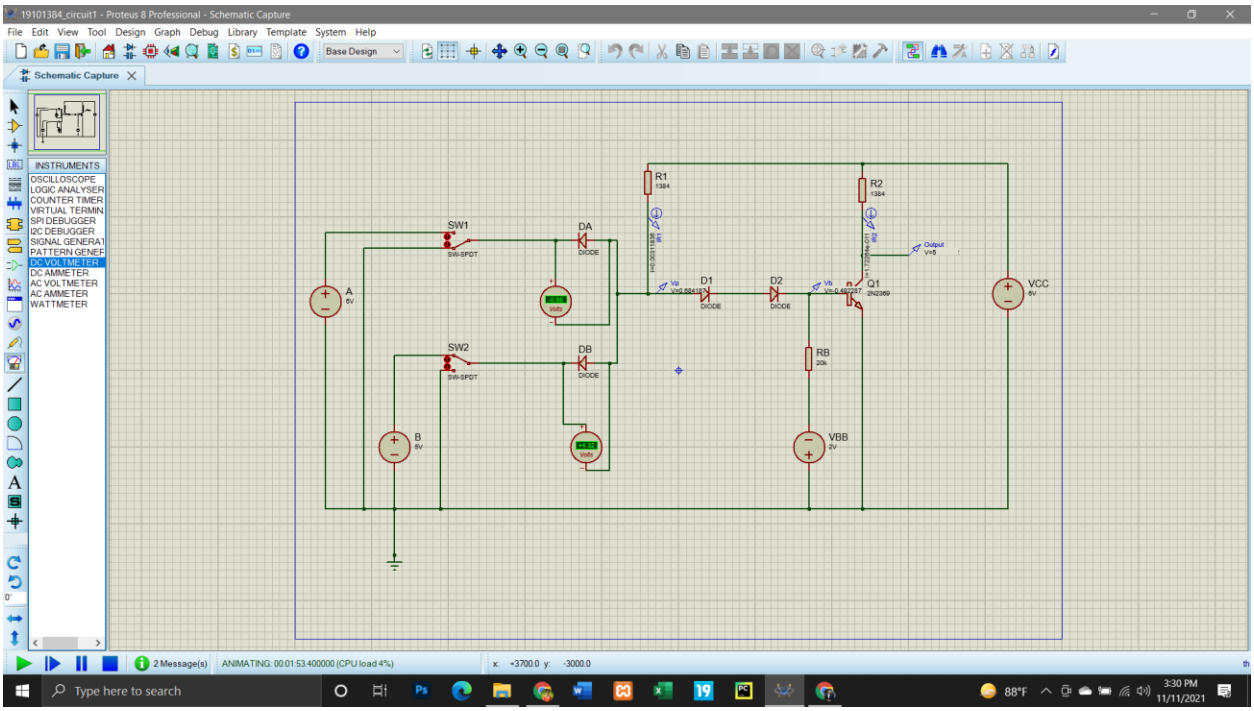
11/11/2021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AC AMMETER
WATTMETER
SW1
SW-SPDT
DA
DIODE
A
6V
R1
1384
R2
1384
D1
D2
Q1
2N2369
Output
VCC
6V
SW2
DB
RB
20k
B
6V
VBB
2V
2 Message(s)
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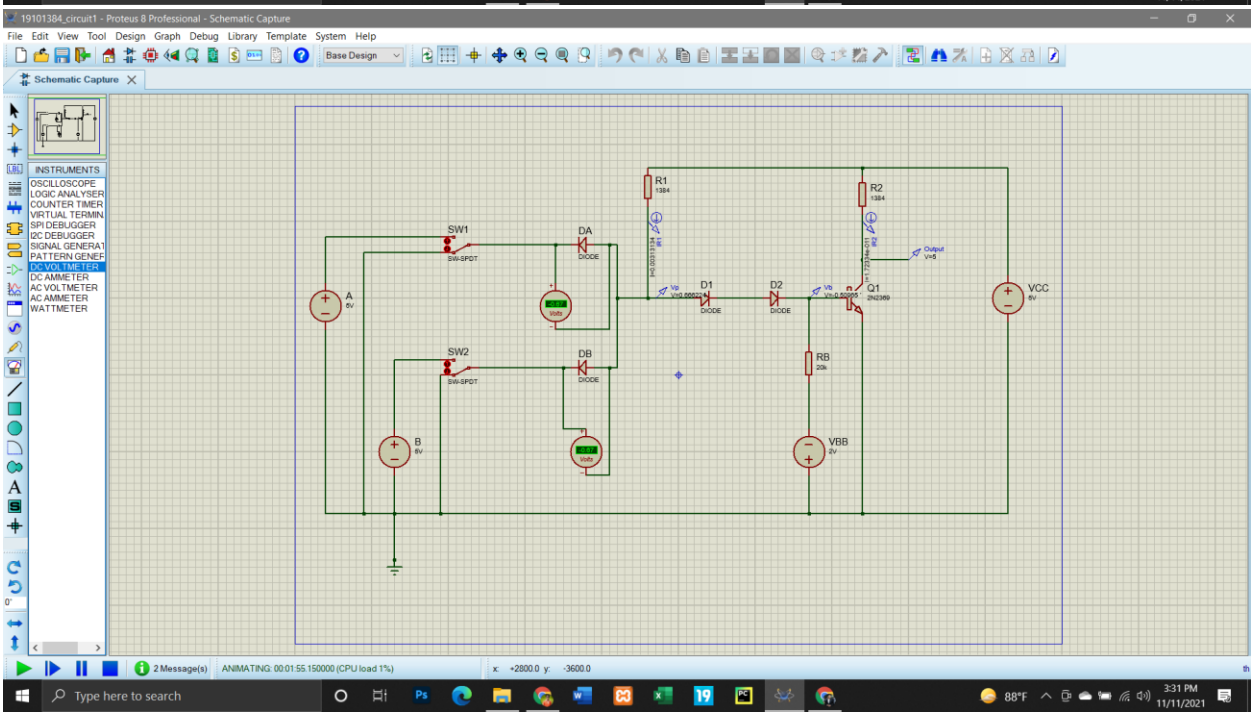
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AC AMMETER
WATTMETER
SW1
SW-SPDT
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A
6V
R1
1384
R2
1384
D1
D2
Q1
2N2369
Output
VCC
6V
SW2
DB
RB
20k
B
6V
VBB
2V
2 Message(s)
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