MILITARY INSTITUTE OF SCIENCE AND TECHNOLOGY

Department of Computer Science and Engineering

Course Title: Electronic Devices and Circuits Sessional

Course code: EECE-170

ASSIGNMENT - 2

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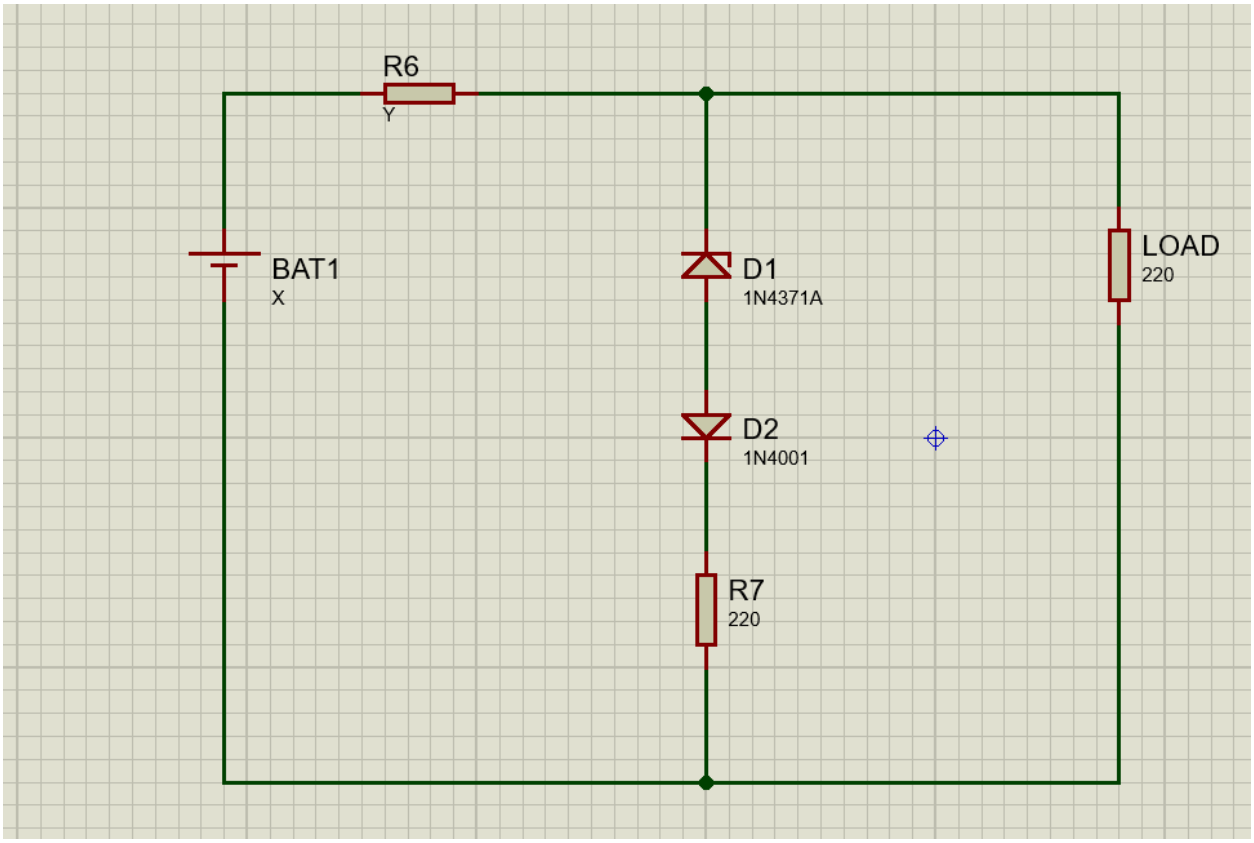
202214068
CSE 22

Lab Evaluation Problems:



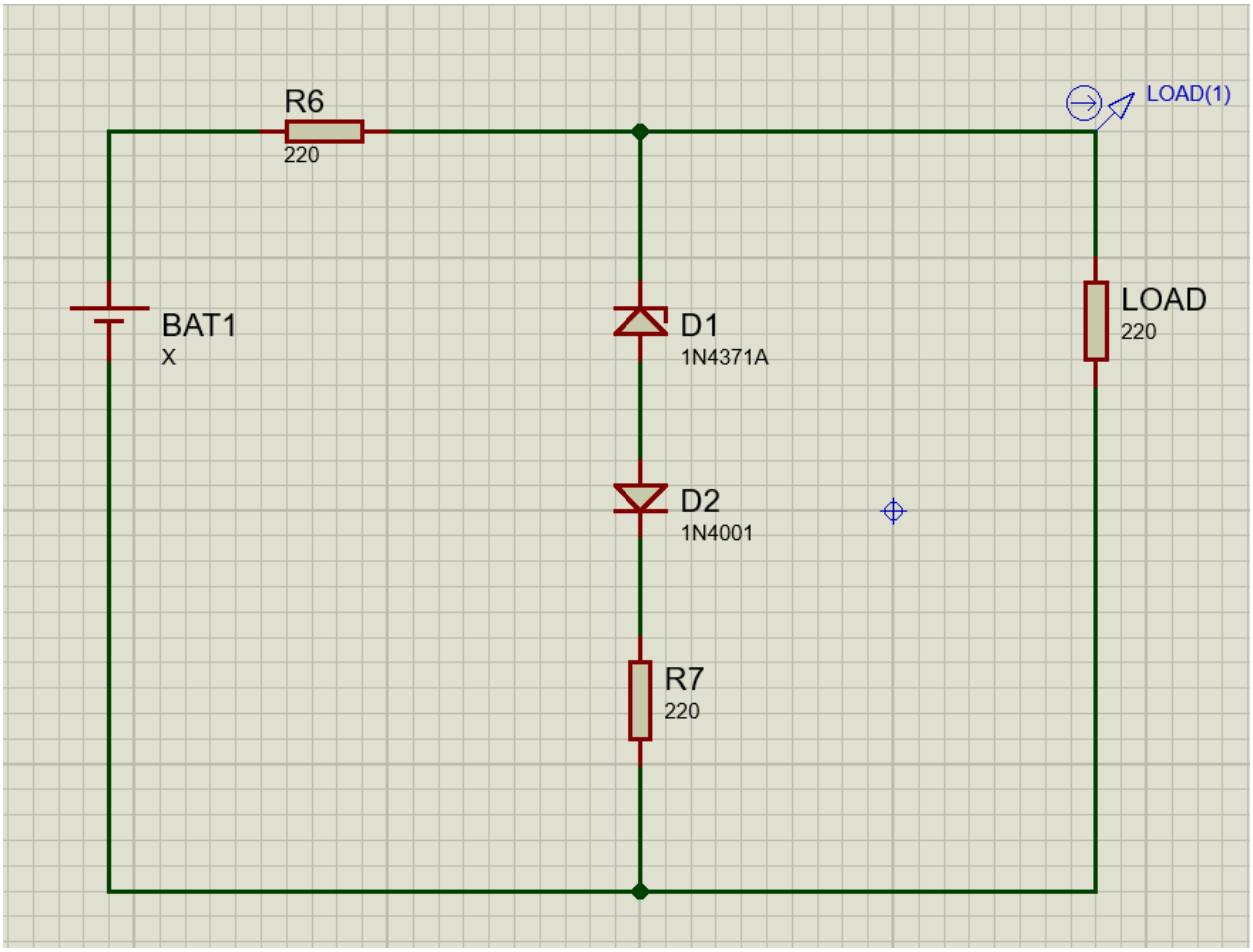
Question no 1:

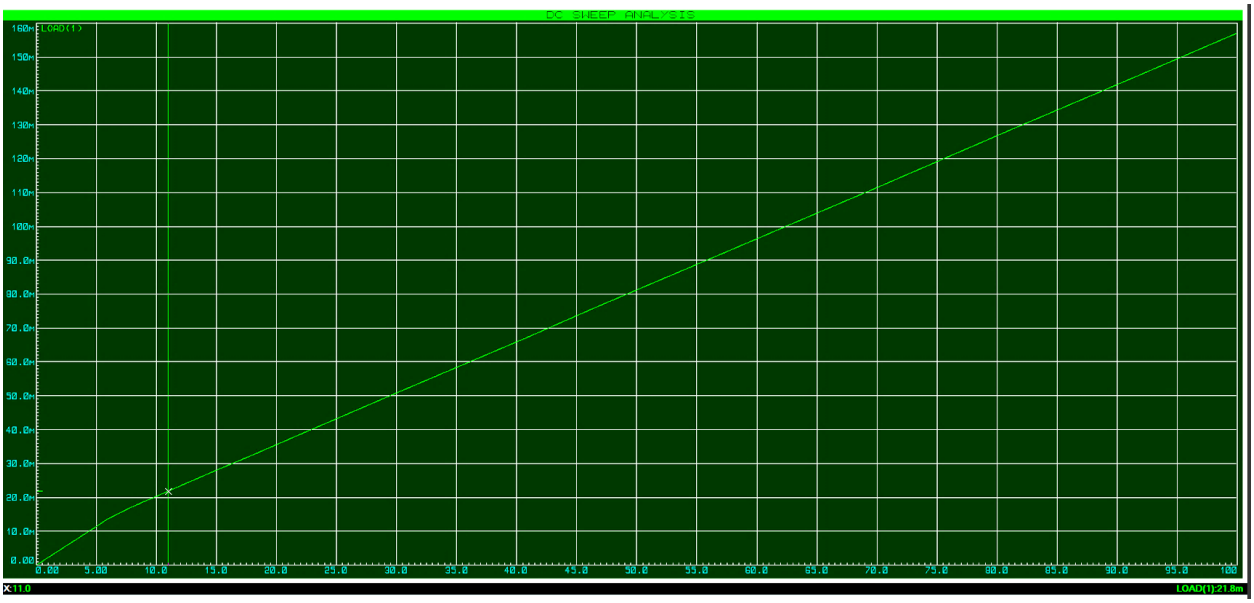
For what battery voltage will the load current be 22mA, if Y=220 ohm?

Ans:

Given,

Y=220 ohm, Load current = 22mA, battery voltage=?


R6
220
LOAD(1)
BAT1
X
D1
1N4371A
LOAD
220
D2
1N4001
R7
220


DC SWEEP ANALYSIS
LOAD(1)
160m
150m
140m
130m
120m
110m
100m
90.0m
80.0m
70.0m
60.0m
50.0m
40.0m
30.0m
20.0m
10.0m
0.00
0.00
5.00
10.0
15.0
20.0
25.0
30.0
35.0
40.0
45.0
50.0
55.0
60.0
65.0
70.0
75.0
80.0
85.0
90.0
95.0
100
X11.0
LOAD(1):21.8m

From the graph:

Battery voltage = 11V (approximately)

Question No 2:

For what value of Y, when X=9V,will the load power be 40mW?

Ans:

Given, X=9V

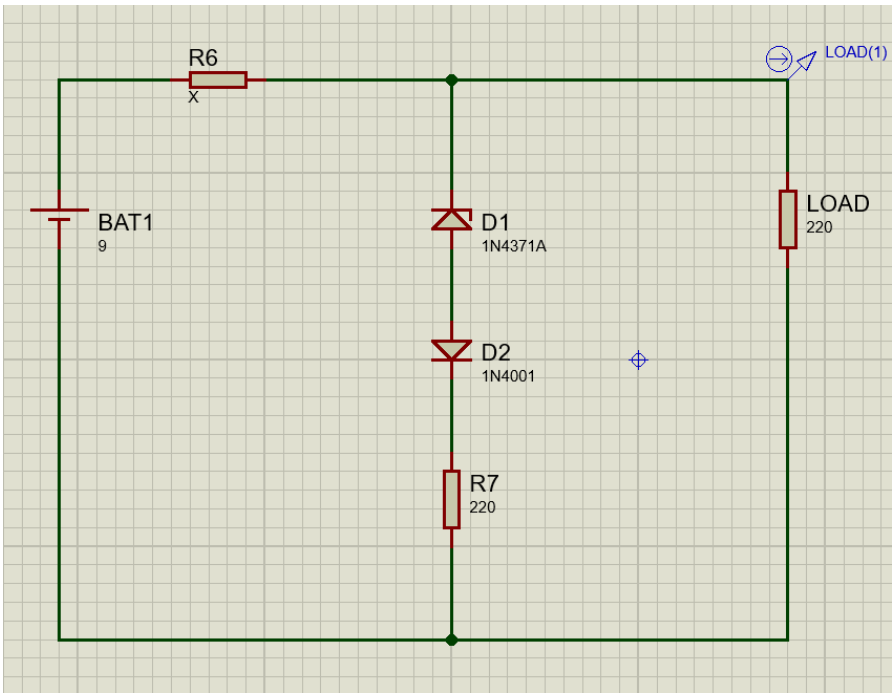
Load power,P = 40mw = $40x10^{-3}W$

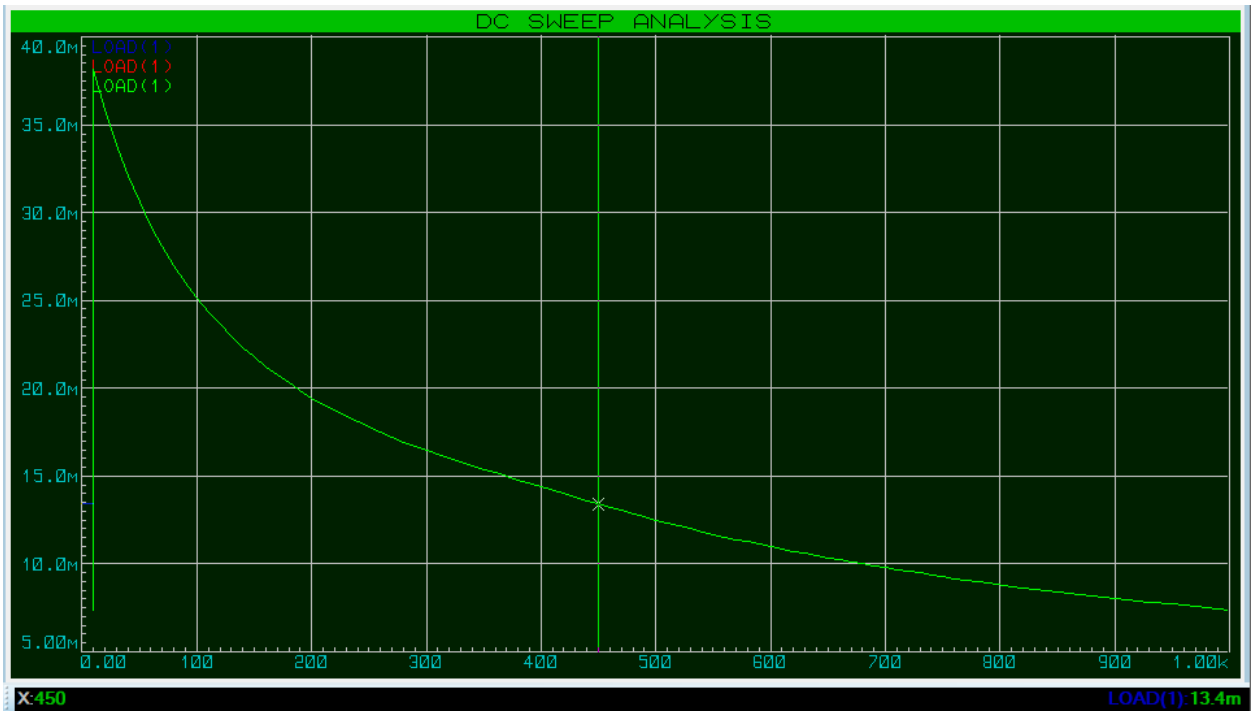
Load resistance = 220 ohm

We know ,

$P=i^2R$

Therefore, i=load current=13.48mA

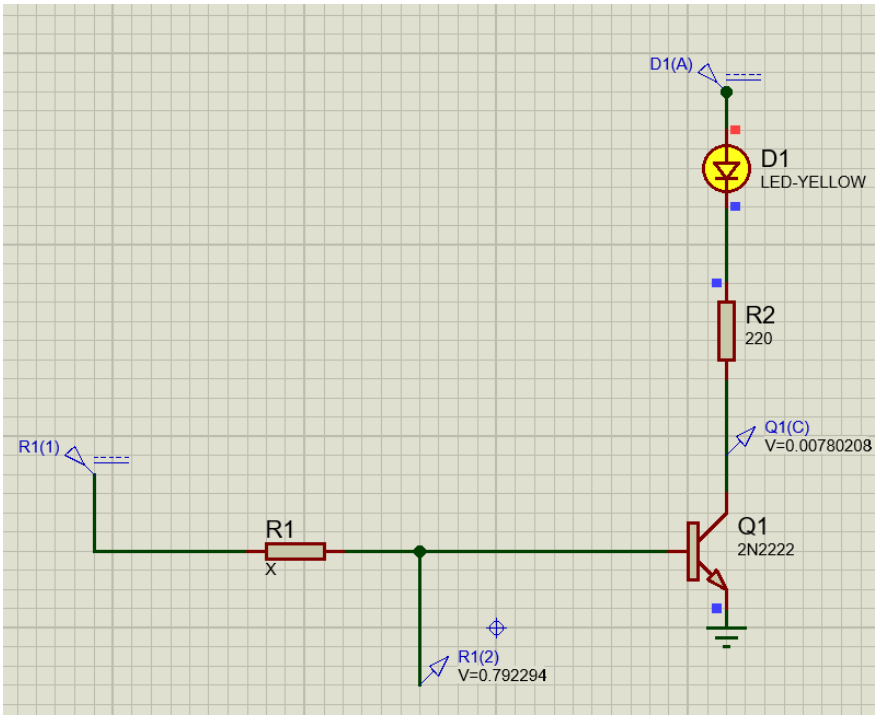


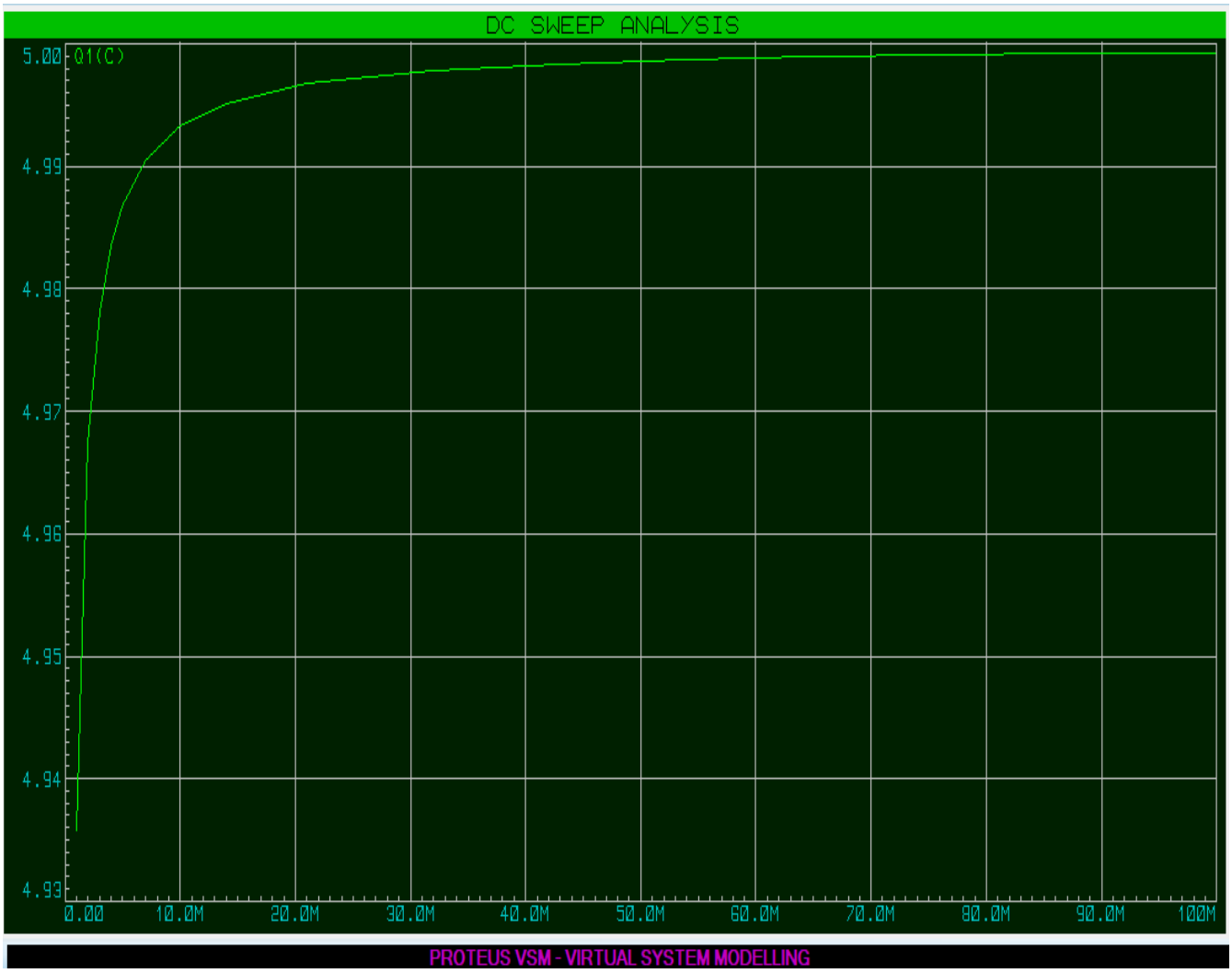


From the graph we get Y=450Ω when current is 13.4mA.

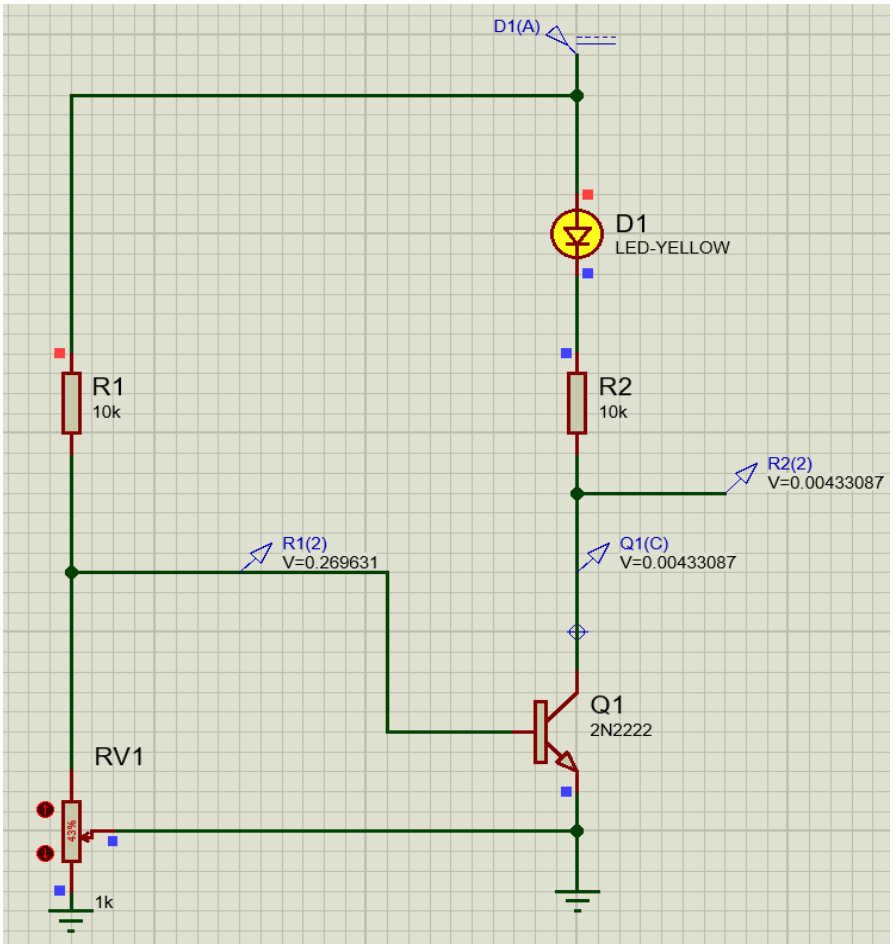
Question 3:

Ans: There are two types of biasing method done in last class in BJT (Bipolar Junction Transistor).

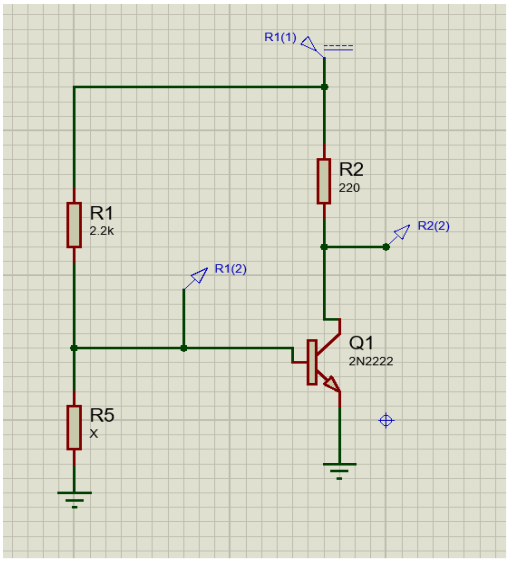


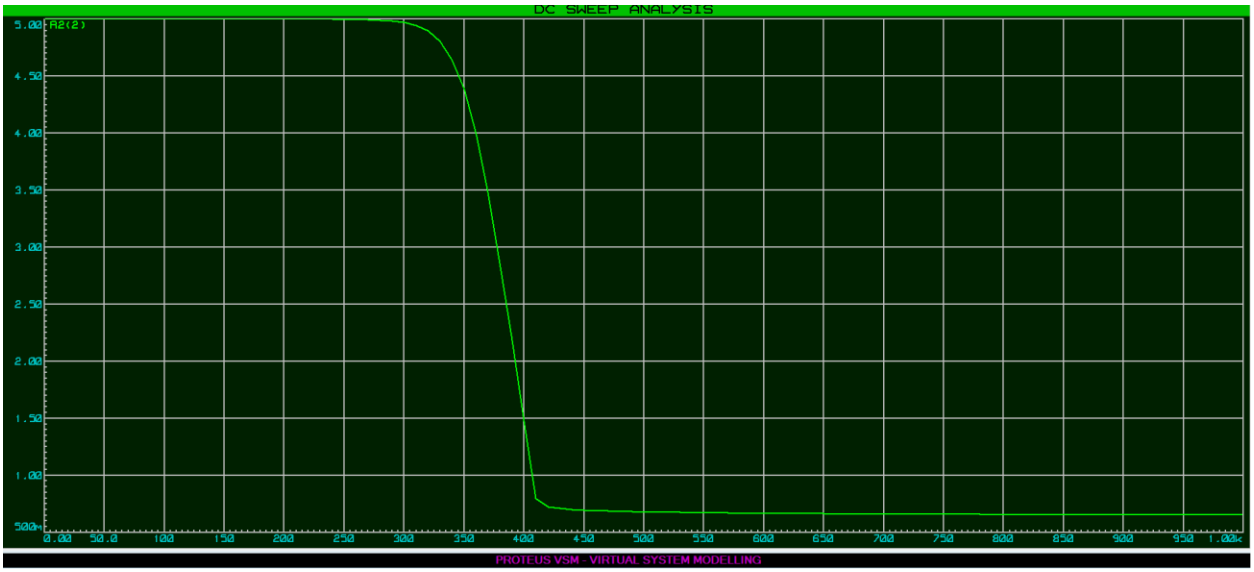

DC SWEEP ANALYSIS
Q1(C)
5.00
4.99
4.98
4.97
4.96
4.95
4.94
4.93
0.00
10.0M
20.0M
30.0M
40.0M
50.0M
60.0M
70.0M
80.0M
90.0M
100M
PROTEUS VSM - VIRTUAL SYSTEM MODELLING

Another method:



Without Pot-HG:




DC SWEEP ANALYSIS
A2(2)
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
500m
0.00
50.0
100
150
200
250
300
350
400
450
500
550
600
650
700
750
800
850
900
950
1.00k
PROTEUS VSM - VIRTUAL SYSTEM MODELLING