**Lab Report**

Course Name : Electrical Circuits

Course Code : CSE209 LAB

Section No : 04

Experiment NO : 03

Experiment name : Bias Point Detail Analysis of DC Circuit With  
 Independent Sources Using PSpice Schematics.

**Submitted to**

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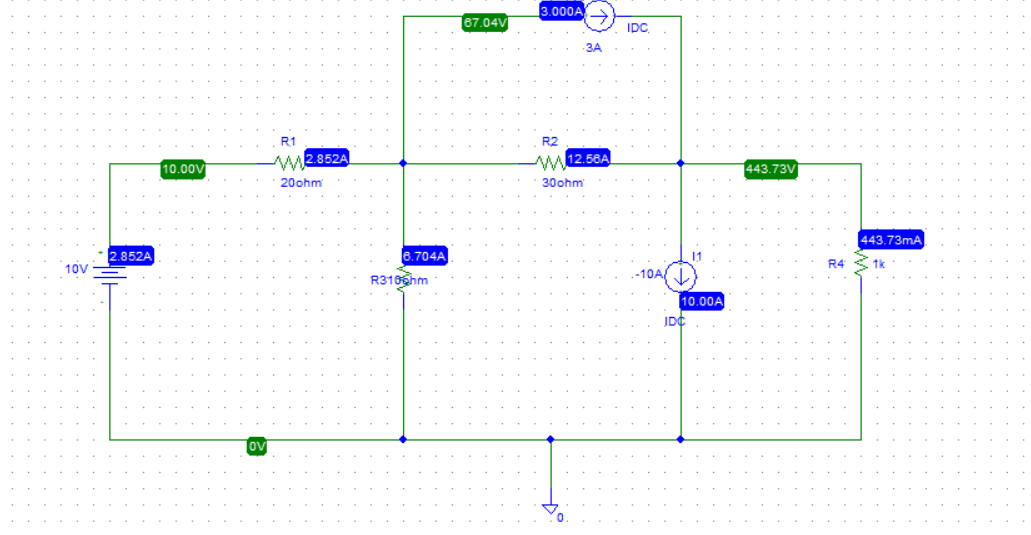
Department : Computer science and engineering

**Date of report submission : /09/2020**

**Objectives:**

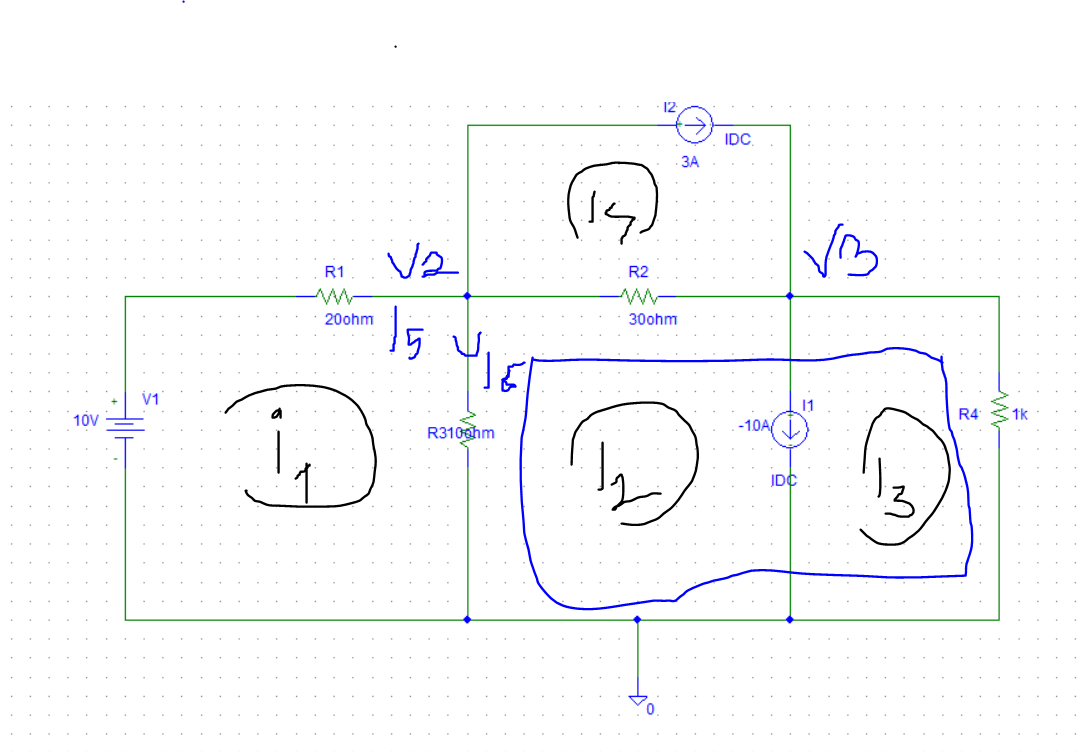
1. To learn fundamentals of PSpice.
2. To analyze Bias Point Detail of DC circuit using PSpice Schematics.

**Circuit Diagram:**



**Answer to the Post-Lab Report:**

1.



From the figure,  
 = 3A

KVL at mesh 1:  
 30 - 10 = 10 ------------- (1)

KVL at Super-mesh:

- 10 + 40 + 10 = 90 ------------- (2)

And  
 – = -10 ------------- (3)

Solving equation (1), (2), and (3) using calculator , we get,

= 0.28571A = 285.71 mA,

= -0.14286A = -142.86 mA,

= 9.85714A = 9857.14 mA

So,

= – = 3 + 0.14286 = 3.14286A = 3142.86 mA

And,  
 = – = 0.28571 + 0.14286 = 0.42857A = 428.57 mA

Here,

= () = 3.14286 30 = 94.2858 V

And,

= ( ) = 9.85714 10 = 98.5714 V

2.

Comparing the theoretical solution of the circuit obtained from above with the solution obtained from PSpice.

|  |  |  |
| --- | --- | --- |
|  | **PSpice** | **Calculated** |
|  | V1= 10 V | V1= 10 V |
| **Voltages** | V2 = 94.2858 V | V2 = 94.2858 V |
|  | V3 = 98.57 V | V3 = 98.5714 V |
|  | = 285.71 mA | = 285.71 mA |
|  | = 10 A | = 10A |
|  | = 3 A | = 3 A |
| **Currents** | = 9.86 A | = 9.85714 A |
|  | =3.143 A | =3.14286 A |
|  | = 428.57m A | = 428.57m A |

**Conclusion :**

We connect this circuit using Pspice software.I think if we could do this same experiment in the lab, the measure value would change a little bit and most importantly we could learn how to connect the circuit for real life.