Assignment 2 (Spring 24)

C
ircuit Theory (PHY301)
Marks: 30
Due Date: June 24, 2024

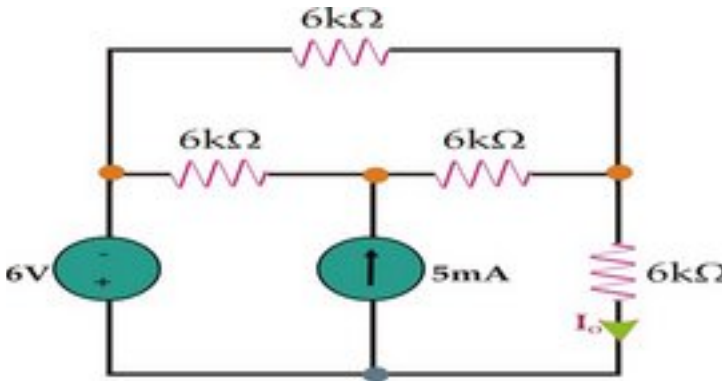
DON'T miss these *important instructions:*

- To solve this assignment, you should have good command over the first 32 lectures.
- Upload assignments as MS Word file through LMS.
- Write your ID on the top of your solution file.
- All students are directed to use the font and style of text as is used in this document.
- Don't use colorful backgrounds in your solution files.
- Use Math Type or Equation Editor etc for mathematical symbols.
- No excuse will be accepted by anyone if found to be copying or letting others copy.
- Don't wait for the last date to submit your assignment.

You can draw circuit diagrams in "Paint" "Corel Draw" in "circuit maker" or in any convenient App you find. The simple and easy way is to copy the given figure in "Paint" and make the required changes in it.

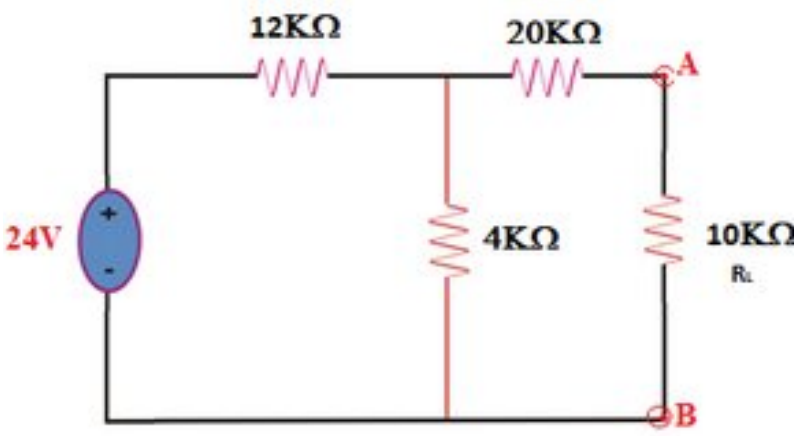
Q.1:

Use Mesh analysis to find current Io in the netwok. Identify and label each mesh otherwise you will lose your marks. Label circuit diagram properly. [Marks:10]



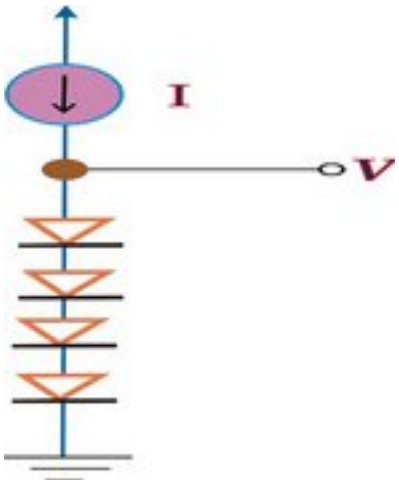
Q.2:

Using Thevenin's Theorem, calculate the voltage drop across point A, B. Write each step and draw circuit diagrams of calculation to get maximum marks. [Marks:10]



Q.3:

The circuit in figure below utilizes four identical diodes having **n=1** and $\mathbf{I_s = 10^{-14}\ A}$. Find the value to obtain an output voltage **Vo=3V**, if a current of **1mA** is drawn away from the output terminal by a load, what is the change in output voltage. [Marks:10]



……Good Luck……