Assignment -1

Basic Electronics (BE): ECE113

Winter-2023

Instructions

- **Institute Plagiarism Policy Applicable.** This will be subjected to strict plagiarism check.
- This assignment should be attempted individually.
- A maximum point for this assignment is 40. All questions are compulsory.
- **File Submission:** Only a *.pdf* file are acceptable, which you have to submit on Google Classroom. Use A4 size sheets only (ruled or blank) to solve your assignment and scan it to create a *.pdf* file. Attempt each question on a different sheet. Do not start a new question at the back of the previous one. Do not forget to mention Page Number (bottom canter) clearly on each sheet of the assignment. Submit a *.pdf* file named *A1_ RollNo.pdf* (e.g., *A1_PhD22100.pdf*), which containing the quality scan copy of your solved assignment.
- **Submission Policy:** Turn-in your submission as early as possible to avoid late submissions. In case of multiple submissions, the latest submission will be evaluated. Expect **No Extensions**. Late submissions will not be evaluated and hence will be awarded zero marks strictly.
- **Clarifications:** Symbols have their usual meaning. Assume the missing information & mention it in the report. Use Google Classroom for any queries. In order to keep it fair for all, no email queries will be entertained.
- There could be multiple ways to approach a question. Please justify your answers. Questions without justification will get zero marks.

Question-1: Find equivalent resistance between the points A & D, in the given below circuit- **(4 Points)**

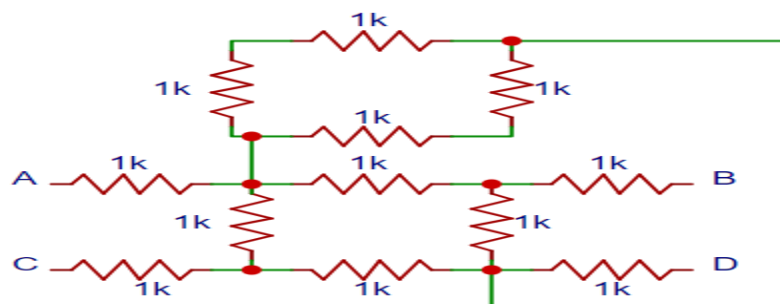**Figure 1**

Question -2: In the given following circuit find the node voltage V_a, V_b, V_c and V_d with the help of nodal analysis.   **(6 Points)**
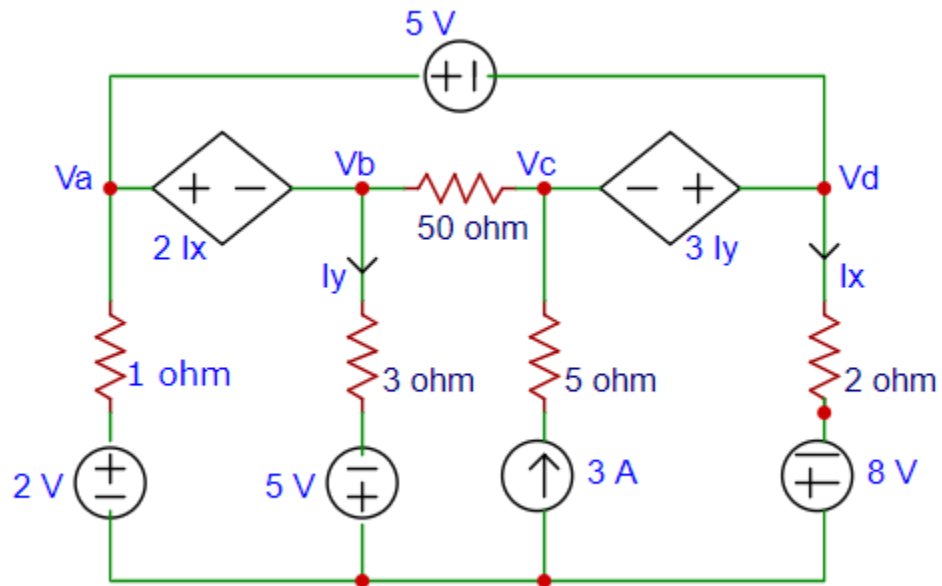

Figure 2

Question -3: In the given following circuit, find out the value of current 'I' by using mesh analysis.
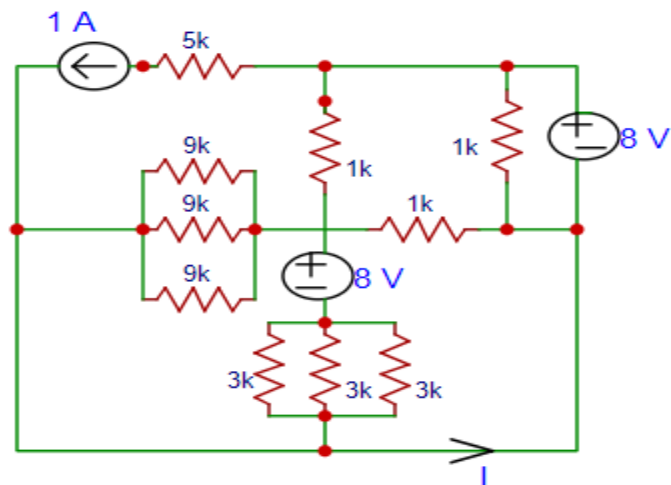
(5 Points)

Figure 3

Question -4: Find the value of 'V$_x$' with the help of nodal analysis in the given below circuit-   **(6 Points)**
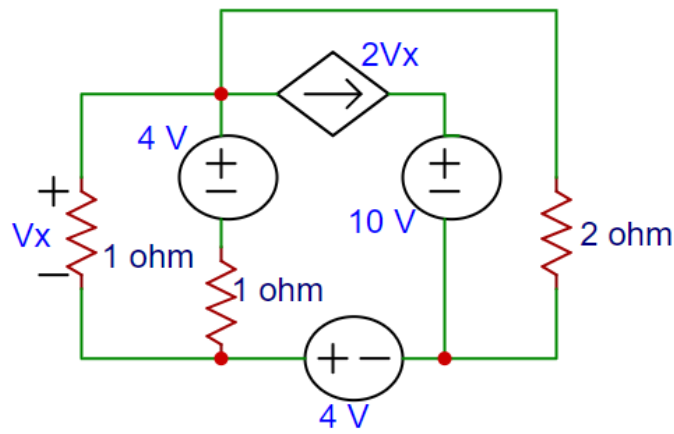

Figure 4

Question -5: In the given following circuit, find the value of currents I$_1$, I$_2$, I$_3$ & I$_4$ with the help of nodal analysis.   **(7 Points)**
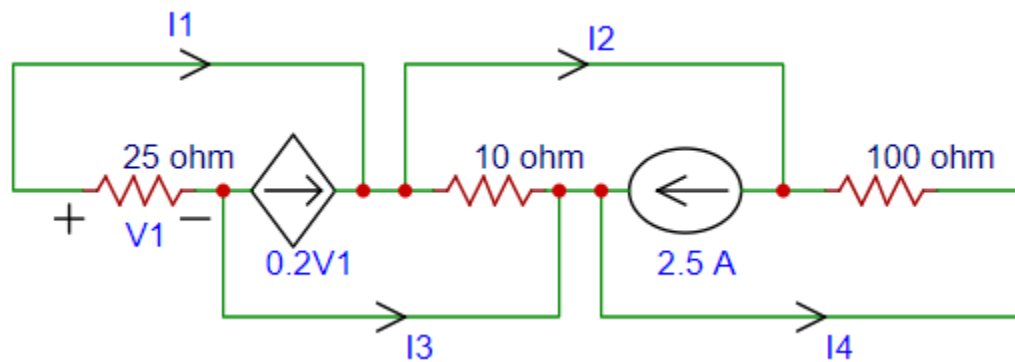

Figure 5

Question -6: In the given following circuit find the value of node voltages V_a, V_b and V_c with the help of KVL, KCL & ohm's law. **(6 Points)**
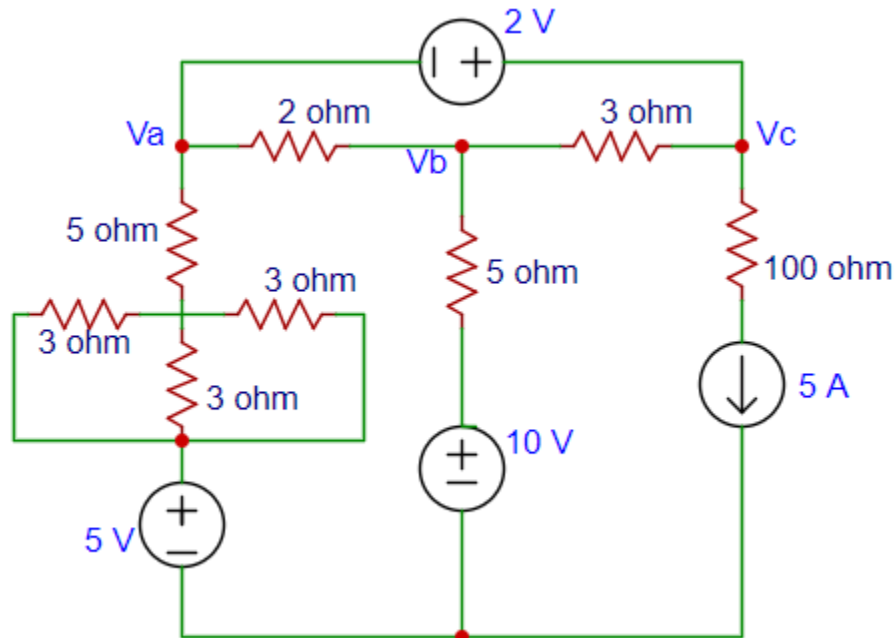

Figure 6

Question -7: The voltage V(t) & current I(t) through an electrical circuit element is given below. Draw the absorbed power in each and every cases (for all time period). **(6 Points)**
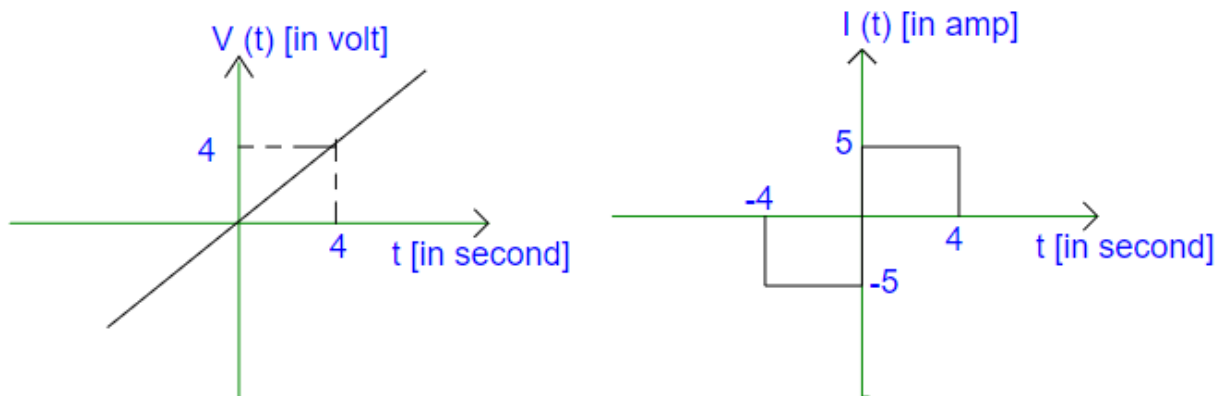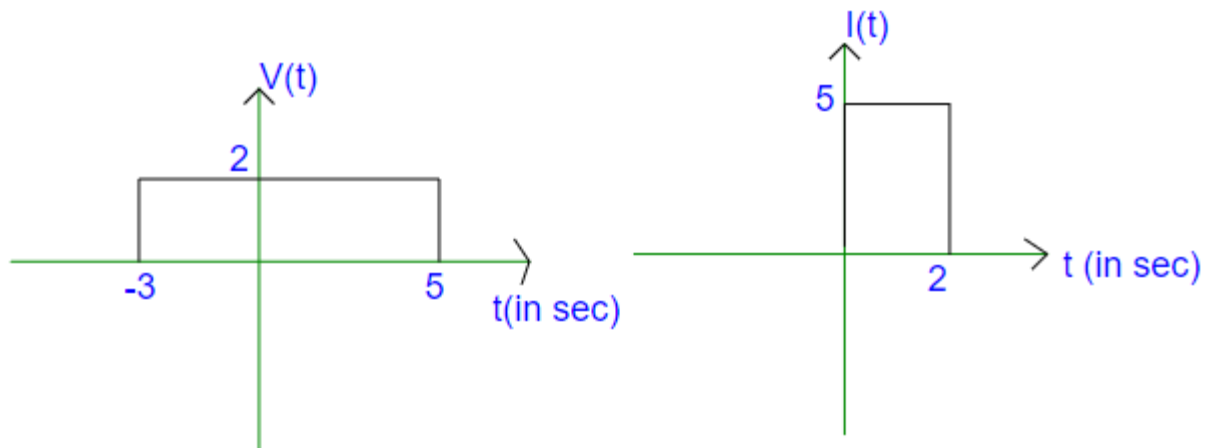

Figure 7
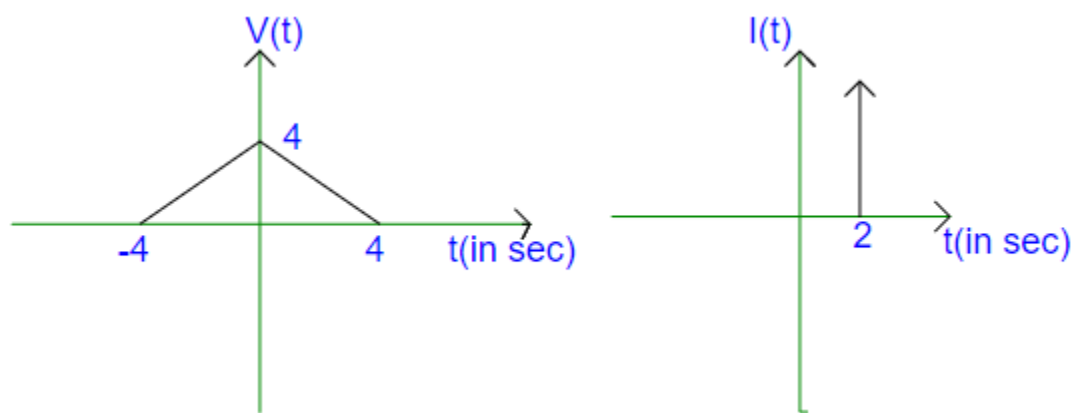
Figure 8

Figure 9