Assignment 2 (Due date: Monday, 31/09/22)

Submission mode: Hard copy with your name and reg no (cabin no #7, 607A Annexure)

1. For the given circuit in Figure, find the following.

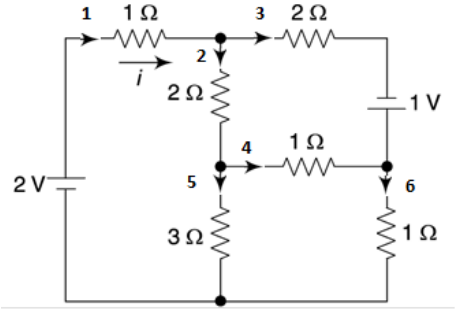
   (a) Network graph of the circuit.

   (b) Incidence and reduced incidence matrix

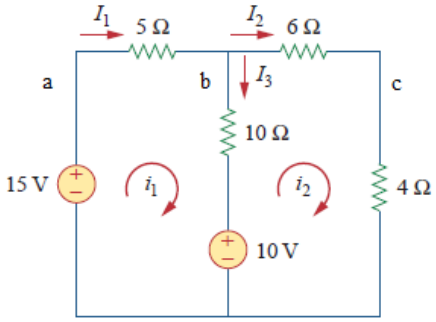
   (c) How many trees are possible

   (d) Tie-set & cut-set matrix with branches 2,4,5 as twigs

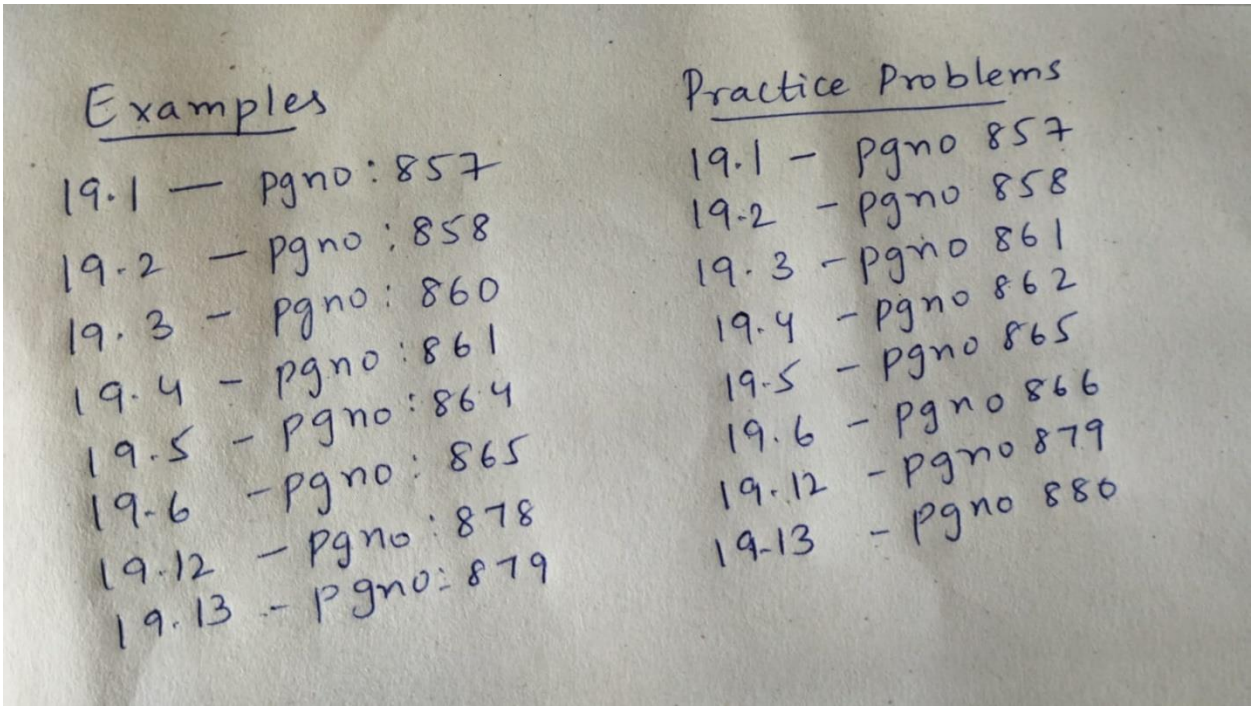
   (e) Current flowing through 1Ω resistor and voltage across 3Ω resistor using both tie-set and cut-set equilibrium equations



2. For the circuit shown in Fig. 3 find the branch currents I_1, I_2 and I_3 using Tie set matrix.



(B) Previously given questions



Examples

19.1 — Pgno: 857
19.2 — Pgno: 858
19.3 — Pgno: 860
19.4 — Pgno: 861
19.5 — Pgno: 864
19.6 — Pgno: 865
19.12 — Pgno: 878
19.13 — Pgno: 879

Practice Problems

19.1 — Pgno 857
19.2 — Pgno 858
19.3 — Pgno 861
19.4 — Pgno 862
19.5 — Pgno 865
19.6 — Pgno 866
19.12 — Pgno 879
19.13 — Pgno 880

(Ref material: Fundamentals of Electric circuits by Charles K. Alexander and Matthew N.O. Sadiku)

(C) Use the attached tutorial sheets and do at least 5 problems from it

- **Odd Number registration numbers attempt the odd numbered problems**
- **Even Number registration numbers attempt the even numbered problems**