

**ELECTROTECHNOLOGY**  
**ELTK1100**  
**ASSIGNMENT #9**

---

1. A conductor 0.5 meters in length is passed at a speed of 25 m/sec. between two pole pieces having a flux density of 0.5  $\mu$ Tesla. Calculate the  $V_{ind}$ .
2. A coil having 1000 turns draws 10A and has a flux of 10  $\mu$ Wb. Calculate the EMF induced in the coil when the current is switched off in 10 msec.
3. A conductor 30 cm long is passed at a speed of 55 km/hr between two pole pieces having a flux density of 2 mTesla. Calculate the induced voltage in the conductor.
4. A coil having 2500 turns draws 5A and has a flux of 100  $\mu$ Wb. Calculate the EMF induced in the coil when the current is:
  - (a) switched off in 0.06 sec.
  - (b) reversed in 500 msec.
5. A solenoid that has 1500 turns of wire is energized by a current of 150 mA. The reluctance of the magnetic circuit is  $1 * 10^5$  A·t/Wb. Calculate the EMF induced in the coil when the current is switched off in 0.02 sec.
6. The current flowing through a 205 turn coil drops from 9A to 0 in 6 sec. If 11V is produced across the device, what is it's inductance? What is the reluctance?
7. A 20H inductor and a 30H inductor are to be connected together. What is their inductance, if they are connected in;
  - (a) series.
  - (b) parallel.
8. If current changes from 1A to 2A in 0.02 s. What will be the induced EMF for **7 (a)** and **7 (b)**?