Assignment 3

The due date for submitting this assignment is 11:59 PM. No late submissions will be accepted.

A single-phase three-wire system is employed to reduce the THD of the supply current. The supply voltage is 230 V (rms) and the load consists of a 5-kW motor and a 3-kW transformer. The line-to-line voltage at the motor is 230 V. Determine the THD of the supply current. Consider the supply impedance to be negligible.

**Question 1:** Calculate the elements of the passive filter.

**Question 2:** Calculate the elements of the active filter.

**Question 3:** Calculate the total harmonic distortion of the load current (THD) in percentage.