

EXPERIMENT NO. - 7

Aim of the Experiment:

Design, assemble and testing of Op-amp inverting amplifier

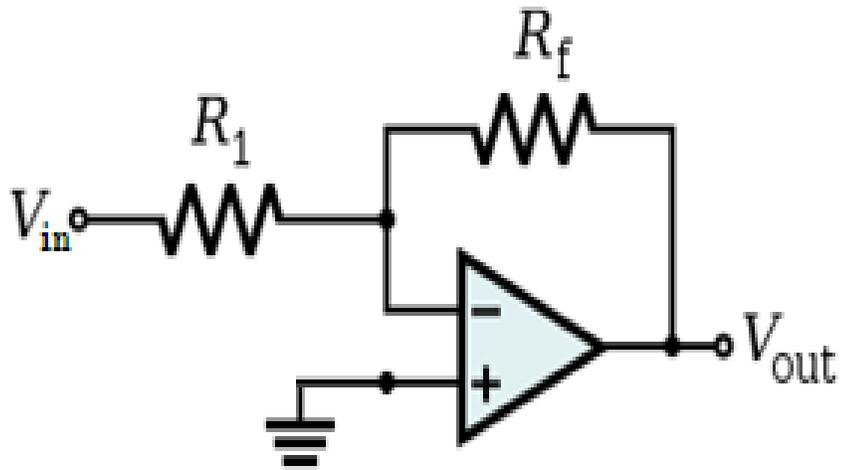
Theory:

The basic circuit for the inverting op amp circuit is shown below. It consists of a resistor from the input terminal to the inverting amplifier input of the circuit, and another resistor connected from the output to the inverting input of the op-amp. The non-inverting input is connected to ground.

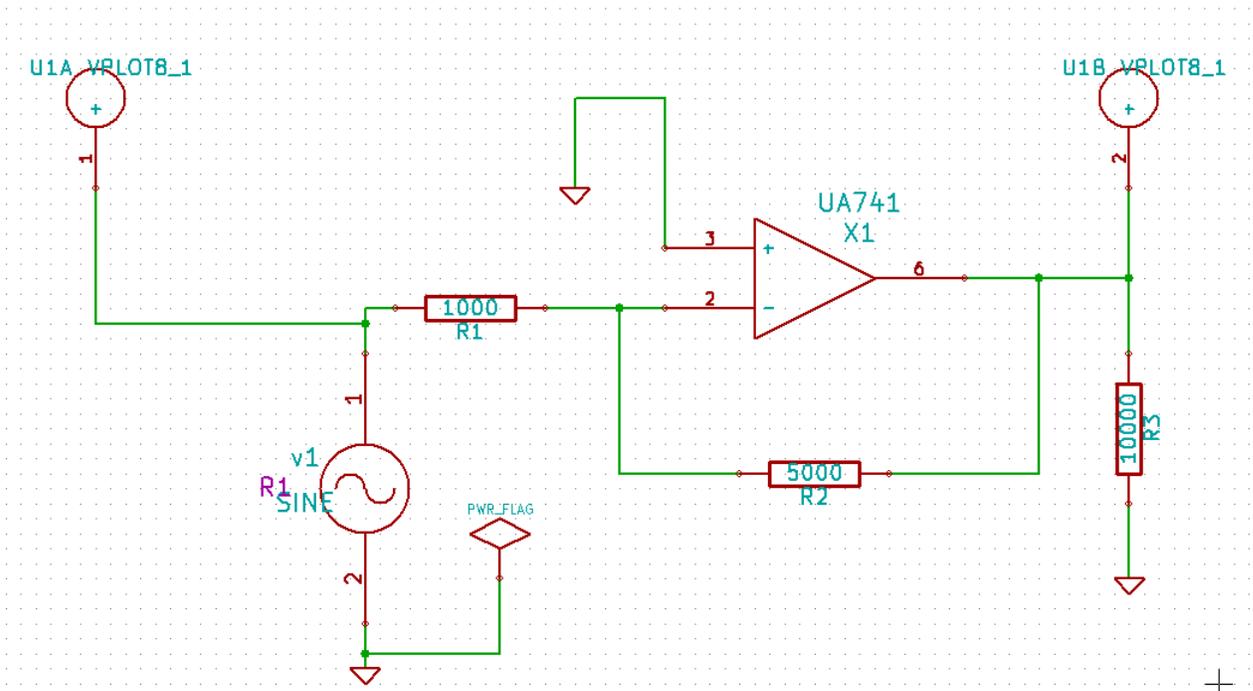
In this inverting amplifier circuit the non-inverting input of the operational amplifier is connected to ground. As the gain of the op amp itself is very high and the output from the amplifier is a matter of only a few volts, this means that the difference between the two input terminals is exceedingly small and can be ignored. As the non-inverting input of the operational amplifier is held at ground potential this means that the inverting input must be virtually at earth potential. As a result, this form of amplifier is often known as a virtual earth amplifier.

As the input to the op-amp itself draws no virtually current this means that the current flowing in the resistors R1 and R2 is the same. Using Ohms law: $V_{out} / R2 = -V_{in} / R1$. Hence the voltage gain of the circuit A_v can be taken as:

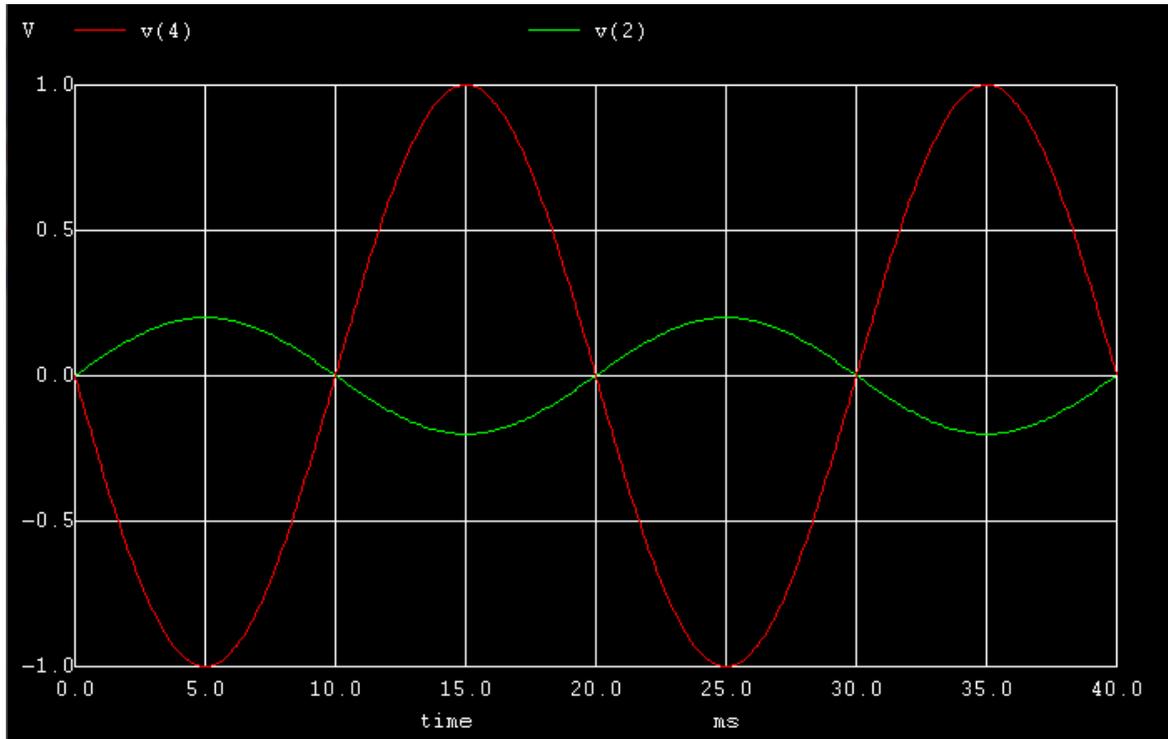
$$\frac{V_{out}}{V_{in}} = -\frac{R1}{R2}$$



Schematic Circuit:



Input and Output waveform:



Conclusion:

Date:

Signature of the Student

NAME:

ROLL NO.:

GROUP ID:

SUB GROUP NO.:

Experiment Mark: / 20

Instructor's Signature