The University of New South Wales

School of Electrical Engineering and Telecommunications

ELEC1111   **Electrical and Telecommunications Engineering**

Practical Exam - <u>Sample paper</u>

| Family name: |
| Student number: |

Q1. Set the signal generator to give a sine wave with a frequency of 1kHz. Display this signal on the oscilloscope. Select the oscilloscope time base in order to see 5 complete periods of the signal on the screen. Select a suitable vertical scale for the oscilloscope and adjust the signal magnitude of the generator to give 4 volts peak-to-peak.

Q2. Build the circuit as shown in Figure 1. Measure the voltage V_3 with the digital multi-meter.

$R_1 = 100\Omega$
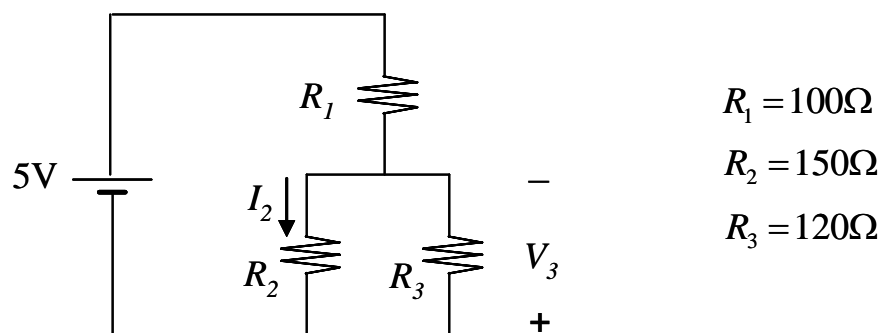
$R_2 = 150\Omega$

$R_3 = 120\Omega$

Figure 1

Q3. Again use the same circuit shown in Figure 1, measure the current I_2 with the digital multi-meter.

▢ ▢

Q4. Again use the same circuit shown in Figure 1 but replace the 5V d.c. power supply with the signal from the signal generator (as specified in Question 1 above). Display the voltage across the resistor R_1 on the oscilloscope. Be careful of how you choose the ground.

▢ ▢

Q5. Build the circuit shown below on your breadboard.
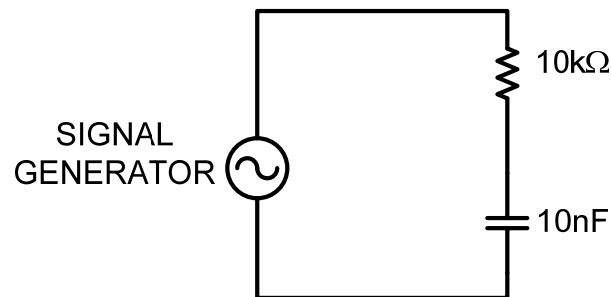
Set the signal generator to output a square wave of amplitude 4V peak to peak and of frequency 1kHz. Use the oscilloscope to display the signal generator waveform and the voltage across the capacitor with the falling edge of the signal generator waveform centered on the screen with one full cycle of both waveforms displayed.

▢ ▢

Time test finished: ▢