EE100 Summer 2006 Project
Waveform Generator
Part I: Introduction and Op-amp Subsections
SOLUTIONS

4. Briefly (≤ 3 sentences) explain why changing the potentiometer resistance changes the frequency of the waveforms.

Solution: Varying the potentiometer resistance changes the time constant of the integrator. Hence if the potentiometer resistance decreases, the capacitor charges (or discharges) faster. This leads to an increase in frequency and vice-versa.

Of course, RC also affects the amplitude of the output waveform (this is optional, if the students do not write this they still get full credit for this question).

5. Briefly (≤ 3 sentences) explain why the waveforms have a DC offset of 4.5 V.

Solution: The DC offset is because of the voltage divider at the non-inverting terminal of the op-amps.

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