**Name:**

**Student number:**

**0) Evaluate this exercise**

|  |  |
| --- | --- |
| Grade [0,5]+comments |  |
| Challenge (0 easy, 5 too hard) |  |
| Usefulness (0 none, 5 very) |  |

**1) Oscillation startup transient simulation**

|  |  |
| --- | --- |
| How long does it take for the oscillation to reach stable output amplitude? |  |

Please add the following figure:

**Figure 1: Oscillator output transient simulation**

**2) Bias current sweep transient simulation**

|  |  |
| --- | --- |
| What is the minimum bias current that provides non-attenuating oscillation? |  |
| gm(NM0) with the minimum required bias current |  |
| gm(NM1) with the minimum required bias current |  |
| How well do these values correspond to theory? (For this type of oscillators in theory *effective* *gm > 1/real(RLC)*  is required for oscillation) |  |

**3) Oscillator characteristics SST simulation**

|  |  |
| --- | --- |
| Oscillation frequency |  |
| Oscillation amplitude |  |
| DC Current |  |

**4) Oscillation tuning range SST simulation**

|  |  |
| --- | --- |
| What is the oscillator tuning range? |  |
| What other methods of tuning could be applied? |  |