**BME 304**

**Building a PPG sensor circuit**

**Roll:** 2018008

**Lab Work-01**

|  |  |
| --- | --- |
| Cut-off frequency of the RC high pass filter | 0.338Hz |
| Amplifier Gain | 500 |
| Cut-off frequency of the RC low pass filter | 15.9Hz |

DC offset = 0.015 V

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Frequency (Hz) | Input Amplitude (Vpp) Vin | Output Amplitude 1 (V1pp) | Output Amplitude 2 (V2pp) | Output Amplitude 3 (V3pp) | Amplifier Gain (V2/V1) | System Gain (V3/Vin) |
| 0.1 | 0.03 | 0.00025v | 0.133v | .137v | 532 | 4 |
| 0.3 | 0.03 | 0.00029v | 0.154v | 0.184v | 531 | 6 |
| 0.6 | 0.03 | 0.0003v | .157v | .23v | 523 | 7 |
| 0.7 | 0.03 | 0.003v | 1.49v | 1.544v | 496 | 51 |
| 0.75 | 0.03 | 0.003v | 1.506v | 1.565v | 502 | 52 |
| 0.8 | 0.03 | 0.003v | 1.522v | 1.585v | 507 | 53 |
| 0.9 | 0.03 | 0.0031v | 1.541v | 1.609v | 497 | 54 |
| 1 | 0.03 | -0.003v | 1.5v | -1.65v | 500 | 55 |
| 3 | 0.03 | 0.0036v | 1.83v | 1.97v | 508 | 65 |
| 6 | 0.03 | 0.004v | 2.14v | 1.79v | 535 | 60 |
| 7 | 0.03 | 0.003v | 1.682v | 1.9v | 560 | 63 |
| 7.5 | 0.03 | 0.0029v | 1.452v | 1.798v | 500 | 60 |
| 8 | 0.03 | 0.004v | 2.07v | 1.39v | 517 | 46 |
| 10 | 0.03 | 5.81e-5v | 0.034v | -0.967v | 585 | 32 |
| 30 | 0.03 | -1.1e-4v | -0.043v | 0.866v | 390 | 28 |
| 50 | 0.03 | -9.064e-5v | -0.03v | 0.598v | 330 | 20 |
| 100 | 0.03 | -5.48e-5v | -0.03v | -0.36v | 547 | 12 |

**Graph:**

