The Chinese University of Hong Kong
Department of Computer Science and Engineering
CENG2030 Fundamentals of Embedded System Design

Lab 4: Basic Circuit Analysis

Answer Sheet

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1. KVL and KCL **[54%]**

a. Create and upload the TSC circuit file. [10%]

b. Voltage measurement

Vcc: ___5V_____ [4%]

V1: ___3.33V_____ [4%]

V2: ___1.67V_____ [4%]

V3: ___1.67V_____ [4%]

Equation: Vcc = _____V1+(V2+V3)/2__ [4%]

c. Current measurement

I0: __-3.33mA____ [4%]

I1: __3.33mA_____ [4%]

I2: __1.67mA_____ [4%]

I3: __-1.67mA____ [4%]

Equation: I0 = _____- I1_____ [4%]

Equation: I1 = _____(I2-I3)_____ [4%]

2. Passive Low Pass Filter **[46%]**

a. Create and upload your circuit in TSC file. [10%]

b. Frequency Response

i. Collected Data [12%]

Frequency of Vin (Hz)	50	100	200	500	1k	2k	5k	10k	20k	50k	100k	200k
Vp of Vout (V)	5.99V	5.95V	5.82V	5.08V	3.74V	2.22V	0.94V	0.48V	0.24V	0.01V	47.8mV	24.9mV

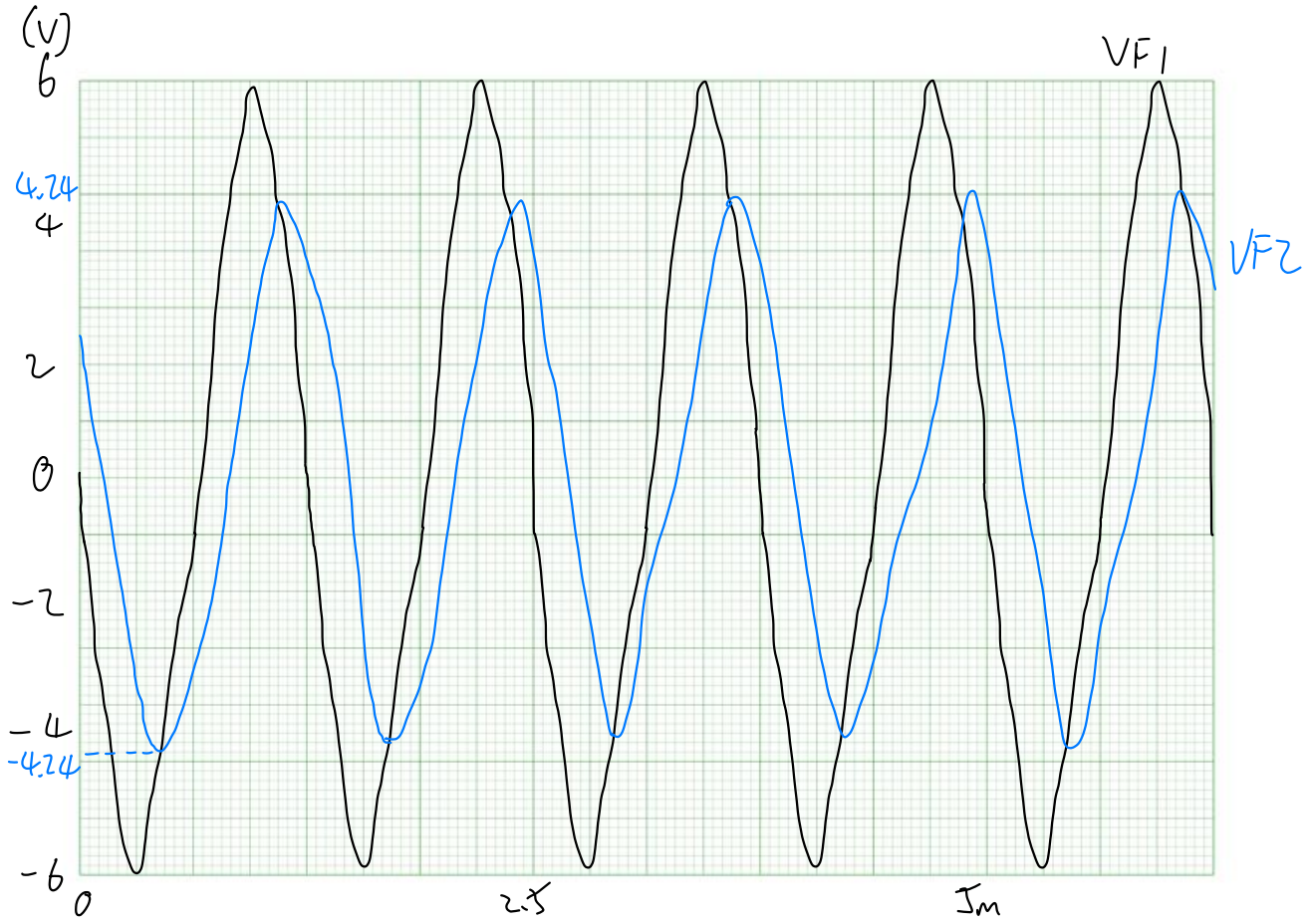
i. Cut-off Frequency

fc: $fc = \frac{1}{2\pi CR}$ = ___795.8Hz____ [4%]

Vout at fc: [redacted] [4%]

4.24V/-135°

ii. Graph Plotting [16%]



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