UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD
DEPARTMENT OF ELECTRICAL ENGINEERING

EEE3095S/EEE3096S Practical 3 Demonstrations 2022

Total Marks Available: 30

	STUDENT 1	STUDENT 2
STUDENT SURNAME	Gamieldien	Young
STUDENT FIRST NAME	Mogamad	Fynn
STUDENT NUMBER	GMLMOG016	YNGFYN001
STUDENT SIGNATURE		

FIELDEN
CLAIRE
FLDCLA001

TUTOR NAME + SIGNATURE	Sina
DATE [YYYY-MM-DD]	2022-09-19

Section	Action + Mark Allocation	Mark
Intro	Introduce yourselves and briefly describe the purpose of the practical/demonstration. [3 marks]	2
Interrupts	LED frequency is toggled when blue pushbutton is pressed and released. Ensure that debouncing has been implemented. [5 Marks]	5
ADC	**pollADC()** works as expected. Students to explain the max and minimum values obtainable in the current ADC configuration. Display the ADC value to Putty. [5 Marks]	5
ADC	**ADCtoCRR()** works as expected. Scales ADC value (0-4095) to CRR value (0-47999). Display duty cycle value to Putty (CRR/47999). Check that LED brightness increases/decreases as potentiometer is turned. [5 Marks]	5
ADC/Interrupts	**[Question]** The delay in the main loop affects how often the LEDs brightness can be changed. Explain how we could remove that limitation assuming the ADC generates an interrupt each time a conversion is completed. [4 Marks]	3
BCOS	**[Question]** Explain the need for interrupts and ADCs in embedded systems. Give 3 uses of PWM. [5 Marks]	3
General	Well-written, well commented code. Code uploaded to Git. Sensible variable names, functions in correct places etc. Overall preparedness for demo. [3 Marks]	2
	TOTAL	25