



# American International University – Bangladesh

## Faculty of Engineering – Electrical & Electronics Engineering

<b>Course Name:</b>	Microprocessor and Embedded Systems	<b>Course Code:</b>	EEE 4103
<b>Semester:</b>	Fall 2022-2023	<b>Section:</b>	K
<b>Faculty Name:</b>	MD. ALI NOOR		

<b>Assignment No:</b>	1 (individual submission consisting of 10 marks )
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<b>Student Name:</b>	Asif Sharif Akash		
<b>Student ID:</b>	20-42647-1	<b>Program Name:</b>	BSc in CSE

<b>Submission Link (MS Teams):</b>			
<b>Submission Date:</b>	18/10/2022	<b>Due Date:</b>	20/10/2022

**Question: Complete the following table after going through the datasheet of the following processors:**

	ATMega328P	STM32F401xE	TM4C	PIC33FJ32GP302
<b>Architecture type</b>	RISC 8-bit	RISC 32-bit	ARM Cortex-M4F	Modified Harvard 16-bit
<b>Number of pins</b>	28	48	64	28
<b>Processing Speed (MIPS)</b>	1MIPS per MHz	105 DMIPS/1.25 DMIPS/MHz	100 DMIPS	Up to 40 MIPS
<b>Program flash memory (bytes)</b>	32 Kbytes	512 Kbytes	256 Kbytes	32 Kbytes
<b>Operating voltage range (V)</b>	1.8V - 5.5V	1.7V - 3.6V	2.0V - 5.0V	3.3V ( $\pm 10\%$ )
<b>No. of PWM channels</b>	6	4	16	4
<b>Communication Interfaces</b>	1) Programmable serial USART 2) Master/slave SPI serial interface	1) Up to 3 x I2C interfaces 2) Up to 3 USARTs (2 x 10.5 Mbit/s,	1) Universal Asynchronous Receivers/Transmitter-Eight UARTs (UART)	1) Parallel Master Port 2) Two UART modules 3) Two 4-wire SPI modules



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	3) Byte-oriented 2-wire serial interface 4) Two 8-bit Timer/Counters with separate pre-scaler and compare mode	1 x 5.25 Mbit/s) 3) SDIO interface 4) Advanced connectivity: USB 2.0 full-speed device/host/OTG controller with on-chip PHY	2) Synchronous Serial Interface (SSI) - Four SSI modules 3) Inter-Integrated Circuit (I2C) - Four I2C modules with four transmission speeds including high-speed mode 4) Controller Area Network (CAN) - Two CAN 2.0 A/B controllers 5. Universal Serial Bus (USB) - USB 2.0 OTG/Host/Device	4) I2C module (100K, 400K and 1Mbaud) with SMBus support
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