Register Number:……..

KUMARAGURU
college of technology
character is life

B.E DEGREE EXAMINATIONS: NOV/ DEC 2023

(Regulation 2018)

Fifth Semester

ELECTRONICS AND INSTRUMENTATION ENGINEERING

U18EII5202:Embedded Microcontroller

COURSE OUTCOMES

CO1: Relate microcontroller architecture to embedded development.
CO2: Develop algorithms for embedded system design.
CO3: Practice serial protocol programming with microcontrollers.
CO4: Specify appropriate protocol for given application.

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions: -
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Compare 8051, AVR, PIC and ARM in Speed Clock Cycle, memory and power.	CO1	[K_1]
2.	List the MCU clock properties of AHB & APH	CO1	[K_1]
3.	Differentiate between RISC and CISC.	CO1	[K_2]
4.	State the advantages and applications of Interrupt Handling	CO2	[K_2]
5.	List down the difference between UART and USART Communication	CO2	[K_2]
6.	Draw Three wire communication configuration.	CO3	[K_1]
7.	List the drawbacks of I2C Communication	CO3	[K_1]
8.	Write down the applications of SPI Communication	CO3	[K_2]
9.	State SPI Interrupt Handling register configuration. .	CO4	[K_1]
10.	List the importance of baud rate in UART	CO4	[K_2]

Answer any FIVE Questions: -
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.		Describe ARM architecture and explain the pin diagram of STM342 MCU Bus Interface.	16	CO1	[K_2]
12.	a)	Illustrate the Pin Diagram of NVIC and explain the function of Interrupt signal.	8	CO1	[K_2]
	b)	Explain in detail about the MCC Clock in AHP bus organization	8	CO1	[K_2]

13.		Illustrate the UART data frame in Tx/Rx Communication and explain three modes of communication in detail.	16	CO2	[K_2]
14.	a)	Write an ADC program for interfacing MSP3008 SPI communication.	10	CO3	[K_3]
	b)	List out the merits of 4-wire communication.	6	CO3	[K_2]
15.		Describe the working of PWM with its Peripheral Timer.	16	CO3	[K_2]
16.		Explain about RTC timer using I2C Tx/Rx communication for Event interrupt handling.	16	CO3	[K_2]

****