



Continuous Assessment Test (CAT) – I - AUGUST 2025

Programme	: B.Tech(ECE/ECM /VLSI)	Semester	: FS 2025-26
Course Code & Course Title	: BECE204L& Microprocessors and Microcontrollers	Slot	: D1+TD1
Faculty	: Dr. Muthulakshmi S Dr. Guga Priya G Dr. Abraham Sudharson Ponraj Dr. Chanthini Baskar	Class Number	: CH2025260100476 CH2025260100478 CH2025260100480 CH2025260100482
Duration	: 90 Minutes	Max. Mark	50 Marks

General Instructions: < Use this space to provide additional information such as graph sheet, data book etc.>

- Write only your registration number on the question paper in the box provided and do not write other information
- Use statistical tables supplied from the exam cell as necessary
- Use graph sheets supplied from the exam cell as necessary
- Only non-programmable calculator without storage is permitted

Answer all questions

Q. No	Sub Sec.	Description	Marks	CO	BT Level
1		Which one do you prefer to design a low power, low cost smart irrigation system: Microprocessor or Microcontroller? Justify your selection with proper explanation.	[5]	1	K2
2		Explain the 8051 architecture in detail with a neat sketch.	[10]	3	K1
3		Consider the MPMC marks of 10 students are stored in internal RAM locations starting from 30H as given {20H, 15H, 25H, 33H, 45H, 50H, 39H, 25H, 28H, 49H}. Write an 8051 assembly language program to find out the topper of the class and store it in an external memory location 3000H. The program should have the comments.	[10]	3	K3
4		In an 8051-based system, the serial communication is configured using Mode 1 (8-bit UART) with a baud rate of 9600 bps. a) What changes are required to double the baud rate to 19200 bps using the same 11.0592 MHz crystal?[2 Marks] b) Explain the role of SMOD bit in the PCON register during baud rate adjustment.[3 Marks]	[5]	4	K2
5		Write an 8051 assembly program that:	[20]	4	K3

	<ul style="list-style-type: none">• Uses Timer 0 in 16-bit mode to count internal clock pulses.[7 Marks]• When an external interrupt INT0 (pin P3.2) is triggered, stop the timer and transmit the current timer count via serial port (9600 baud).After displaying the count, reset the timer and continue counting.[9 Marks]• Explain the registers associated with this in detail.[4 Marks] <p>Assume the clock frequency as 11.0592 MHz.</p>			
--	--	--	--	--

*****All the best *****