BACHELOR OF TECHNOLOGY (CBCS - 2023)

B. Tech. Sem-III INFORMATION TECHNOLOGY : WINTER: 2025

SUBJECT: MICROPROCESSORS & MICROCONTROLLERS

Day : Friday

Date : 19/12/2025

W-29246-2025

Time : 10:00 AM-01:00 PM

Max. Marks : 60

NB :

1. Assume suitable data, if necessary.
2. Draw neat labelled diagrams WHEREVER necessary.
3. Figures to the right indicate FULL marks for the question.
4. All questions are COMPULSORY.

Q. 1	Explain the pipelined architecture of 80386 processor with suitable figure. Explain the advantages of pipelined architecture over non-pipelined architecture.	(10)
	OR	
Q. 1	Describe the role of inter-processor communication (IPC) in multiprocessor organizations with neat diagram.	(10)
Q. 2	Demonstrate the working of branch prediction logic in reducing execution time in Intel Pentium processor.	(10)
	OR	
Q. 2	Break down the floating point pipeline stages of the Pentium processor and explain their significance in instruction execution.	(10)
Q. 3	Describe the role of pipelining in improving ARM processor performance.	(10)
	OR	
Q. 3	Evaluate the significance of ARM's evolution from ARMv7 to ARMv11 in terms of performance and energy efficiency.	(10)
Q. 4	Analyze the differences between the 8051 microcontroller's internal and external RAM and ROM memory access.	(10)
	OR	
Q. 4	Summarize the interrupt handling process in the 8051 microcontroller.	(10)
Q. 5	Justify the choice of AVR microcontrollers over other 8-bit microcontrollers for beginner-level projects. Also discuss the importance of different types of AVR microcontrollers for specific applications.	(10)
	OR	
Q. 5	Critique the internal architecture of the ATmega16/32 in terms of efficiency and versatility.	(10)
Q. 6	Describe the architecture of the Arduino Uno and also summarize the role of the Arduino IDE in programming an Arduino Uno.	(10)
	OR	
Q. 6	Discuss a case study of development of a Arduino/Raspberry Pi based project of your choice. Give all phases in the development.	(10)

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