Code No: 155CF **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year I Semester Examinations, July/August - 2023
MICROPROCESSORS AND MICROCONTROLLERS
(Common to ECM, CSE(IOT))

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	Write about Memory Segmentation.	[2]
b)	Discuss the importance of Macros.	[3]
c)	What are the various modes of the 8051 timers?	[2]
d)	List out the interrupts available in 8051.	[3]
e)	What is the need of RS232 interface?	[2]
f)	What is the importance of the UART?	[3]
g)	Mention the importance of Thumb instructions.	[2]
h)	Explain about CPSR in ARM.	[3]
i)	What are the advantages of OMAP Processor?	[2]
j)	What is the need of advanced ARM Processors?	[3]

PART – B

(50 Marks)

2.a) Draw the internal architecture of 8086 microprocessor and explain.
b) Write an assembly language programming to mention the factorial of the given number. [5+5]

OR

3.a) List out the flag manipulation instructions of 8086 processor.
b) Explain 8086 interrupts and interrupt response with interrupt Vector Table. [5+5]

4.a) Draw and describe the memory organization of 8051 micro controller.
b) Describe with examples various modes of the 8051 timers. [5+5]

OR

5.a) Draw the pin diagram of 8051 and explain the functioning of each and every pin.
b) Explain about various addressing modes and instruction set of 8051. [5+5]

6.a) Explain the interfacing of LEDs with 8051 microcontrollers in detail.
b) Explain about the standard 8-bit UART mode with examples. [5+5]

OR

7.a) Explain interfacing of keyboard with 8051 microcontrollers using relevant diagram.
b) List out the steps involved in programming the 8051 to transfer data serially. [6+4]

8.a) Draw ARM7 Architecture and explain its features in detail.
b) Explain the necessity of Architecture Revisions in ARM processor. [6+4]

OR

9.a) Explain in detail about the ARM Processor Families.
b) Explain the generic structure of program status register as ARM core. [5+5]

10. Explain the OMAP processor with its architecture. [10]

OR

11. Explain the CORTEX processor with its architecture. [10]

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