Code No: 156BU **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, February - 2023
MICROPROCESSORS AND MICROCONTROLLERS
(Common to EEE, MCT)

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)	When does the 8086 processor is in minimum mode and maximum mode?	[2]
b)	Draw the flag register of 8086 Microprocessor.	[3]
c)	Draw the T_0 and T_1 registers of 8051 microcontroller.	[2]
d)	Write about PSW used in 8051 microcontroller.	[3]
e)	Give the RS-232 Standard details.	[2]
f)	List out the difference between static and dynamic memories.	[3]
g)	Draw the ARM core data flow model.	[2]
h)	How instructions are encoded in ARM machines?	[3]
i)	Mention the features of low cost debug solution in OMAP.	[2]
j)	Mention external interfaces on Cortex processor.	[3]

PART – B

(50 Marks)

2.a)	Name the various registers of 8086 and explain all registers of 8086.	
b)	Explain any five assembler directives of 8086 with suitable examples.	[5+5]
	OR	
3.a)	Explain the physical memory organization of 8086 system.	
b)	Explain various addressing modes of 8086 microprocessor.	[5+5]
4.a)	Draw the internal architecture of 8051 Microcontroller and explain its operation.	
b)	Explain how interrupts are handled in 8051.	[5+5]
	OR	
5.a)	How does 8051 differentiate between the external and internal program memory?	
b)	Draw the SCON register frame format and explain it.	[5+5]
6.a)	Draw and explain the working of UART.	
b)	Explain the interfacing procedure of an 8 - bit DAC with 8051 microcontroller.	[5+5]
	OR	
7.a)	Write a short note on “On board communication”.	
b)	Interface Eight 8K RAM chips and Four 8K×4 EPROM chips with 8086 so as to form a completely working system configuration.	[5+5]

8. How many registers available in ARM and explain them in detail? [10]

OR

9.a) Compare ARM and Thumb instruction.

b) Draw and explain of interrupt vector table of ARM. [5+5]

10. Explain with a neat diagram about the architecture of OMAP Processor. [10]

OR

11. Discuss about the registers of CORTEX Processor. [10]

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