Code No: 136CT

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, May - 2019
MICROPROCESSORS AND MICROCONTROLLERS
(Electronics and Communication Engineering)

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

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a)	What is the importance of pipelining concept in 8086 microprocessor?	[2]
b)	How to calculate the Physical memory of 8086, with one example?	[3]
c)	Explain the importance of 8051 Microcontroller over microprocessor.	[2]
d)	List out Different interrupts of 8051 Microcontroller.	[3]
e)	Explain the importance of Memory interfacing of 8051.	[2]
f)	Write short notes on USB.	[3]
g)	List out different 16-bit registers used in ARM processor.	[2]
h)	List out few comparisons of ARM and Microcontroller.	[3]
i)	Expand OMPA processor and its memory capacity.	[2]
j)	Explain the different applications of OMPA processor.	[3]

PART - B

(50 Marks)

2.a) Draw the internal architecture of 8086 microprocessor and explain the function of each block in detail.

b) List out different string manipulation instructions used in 8086 microprocessor and explain each one in detail. [5+5]

OR

3.a) Define Addressing mode? List out different Addressing modes used in 8086 microprocessor.

b) Define Macro? Explain its importance in 8086 programming. [6+4]

4.a) List out the important futures of 8051 Microcontroller along with its applications.

b) Draw the Pin Diagram of 8051 Microcontroller and explain each pin in detail. [5+5]

OR

5. Explain the following SFRs of 8051 Microcontroller in detail:
a) SCON b) TCON c) PCON [3+3+4]

6.a) Draw the internal circuit diagram of UART and explain the function of each block in detail.

b) Explain the different Serial data transfer schemes used in serial communication. [5+5]

OR

7.a) Draw the PIN diagram of RS-232 serial communication scheme and explain importance of each pin.

b) Draw the interface circuit diagram of LCD with 8051 and explain its operation in detail. [5+5]

8.a) Draw the internal architecture of ARM processor and explain function of each block in detail.

b) Define Pipeline? Explain the Five stage pipeline concept in ARM processor. [5+5]

OR

9.a) List out different Branch instructions used in ARM processor and explain each one in detail.

b) Explain the concept of Software interrupt instruction in detail. [5+5]

10. List out different classifications of OMPA processor and explain each one type in detail. [10]

OR

11.a) Explain the concept of super scalar pipeline of CORTEX processor along with circuit diagram.

b) Explain the different applications of CORTEX processor in detail. [5+5]

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