

R16

Code No: 136CT

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 features 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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