

Code No: 155CF

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech III Year I Semester Examinations, March - 2024****MICROPROCESSORS AND MICROCONTROLLERS****(Common to ECE, EIE)****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) List the general purpose registers of 8086 microprocessor. [2]
- b) How 16 bit address is converted into 20 bit address in 8086? [3]
- c) List out the different bit addressable SFR's available in 8051. [2]
- d) Give the advantages of using subroutines. [3]
- e) What is USART? [2]
- f) Write a short note on serial communication standards. [3]
- g) Write about conditional instructions. [2]
- h) Give the fundamentals properties of ARM. [3]
- i) What are banked registers? [2]
- j) Differentiate between different ARM processors. [3]

PART – B**(50 Marks)**

- 2.a) Explain the data transfer, instructions of 8086 μ p with examples.
 - b) Write an ALP to convert an 8 bit binary number into its equivalent gray code. [5+5]
- OR**
- 3.a) Explain the concept of Physical memory organization of 8086 Microprocessor with Example.
 - b) Define assembler directive and explain different assembler directives used in 8086 Microprocessor in detail. [5+5]
- 4.a) Explain how stack is implemented in 8051.
 - b) Write an ALP in 8051 to convert a 16 bit binary number to ASCII. [5+5]
- OR**
- 5.a) Explain the timer structures of 8051 μ c.
 - b) Write an 8051 ALP to multiply two numbers 45H and 9AH. [6+4]
- 6.a) Explain the RAM and ROM organization in 8051 microcontroller.
 - b) Discuss the SPI on board communication interface. [5+5]
- OR**
- 7.a) Discuss how to interface an LCD display using 8051 microcontroller.
 - b) Discuss the I2C on board communication interface. [5+5]

8. Explain Current Program Status Register (CPSR) with neat diagram. [10]
OR
9. Explain the different ARM Instruction set of ARM processor. [10]
10. Explain registers used in Cortex Processor. [10]
OR
11. Draw and explain the architecture of OMAP processor. [10]

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Used Papers March-2024