R18

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 µp 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 µc.
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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