

R13

Code No: 126EM

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, February - 2023

MICROPROCESSORS AND MICROCONTROLLERS

(Electronics and Communication Engineering)

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) Write the function of ALE signal in 8086. [2]
- b) Name the different type of registers available in 8086. [3]
- c) Explain the Jump instruction. [2]
- d) Write a simple 2 bytes addition program using general purpose register. [3]
- e) What is mean by interfacing in view of microprocessors? [2]
- f) How is 8255 configured if its control register contains 9BH? [3]
- g) Explain push and POP instructions in 8051. [2]
- h) How the memory of 8051 is organized? [3]
- i) Compare the microprocessor and microcontroller timers. [2]
- j) Draw the read cycle timing diagram for 8086 under minimum mode of operation. [3]

PART - B

(50 Marks)

- 2.a) Write a short note on segmented memory management scheme.
- b) Describe the function of the 8086 queue. [5+5]

OR

3. Draw the internal architecture of 8086 microprocessor and explain the function of each block in detail. [10]

- 4.a) Name and explain Data transfer, arithmetic and branch instructions.
- b) Write an 8086 ALP to find the sum of numbers in the array of 10 elements. [5+5]

OR

5. Describe the assembler directives of 8086 microprocessor.
 - a) DW
 - b) SEGMENT
 - c) PROC and ENDP
 - d) ASSUME
 - e) DUP. [10]

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6.a) Explain the working of USART with 8086.

b) Discuss about A/D Converter.

[5+5]

OR

7.a) Write short note on I/O interfacing in 8086.

b) Explain about Interrupt Service Routine(ISR).

[5+5]

8.a) Discuss about the I/O pins ports and circuit details of 8051 with its diagram.

b) Explain various addressing modes of 8051 microcontroller.

[5+5]

OR

9.a) Draw the PSW and TCON registers of 8051 microcontroller.

b) Explain the different features of 8051 microcontroller in detail.

[5+5]

10. Name the timer available in 8051 and write an assembly language program for 8051 to initialize timer1 in mode1. [10]

OR

11.a) How does 8051 differentiate between the external and internal program memory?

b) Explain how interrupts are handled in 8051.

[5+5]

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QA QA QA QA QA QA QA QA

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