

R13

Code No: 126EM

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, March - 2024

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) Explain about type 2 interrupt, type 3 interrupt in 8086 microprocessor. [2]
- b) Discuss about the computation of physical memory address in 8086 microprocessor. [3]
- c) What are various addressing modes of 8086 microprocessor? [2]
- d) Write a program for finding the factorial of 5 with flow chart. [3]
- e) What is meant by vector interrupt table and interrupt service routing in 8086 microprocessor? [2]
- f) Discuss about the serial data communication schemes. [3]
- g) What is the length of 8051 data and address? [2]
- h) Discuss the memory organization of 8051 microcontroller. [3]
- i) What is the prioritize of interrupts are there in 8051 microcontroller? [2]
- j) Draw the operating modes of timer 0 and timer 1 and timer 2 in 8051 microcontroller. [3]

PART - B

(50 Marks)

2. Draw and explain about internal architecture of 8086. [10]

OR

- 3.a) Draw the timing diagram of minimum mode read cycle and write cycle for 8086 microprocessor.
- b) Discuss about the minimum mode of operation of 8086 microprocessor chip with a neat sketch. [5+5]

- 4.a) Write a program in 8086 microprocessor for the conversion of packed BCD to ASCII.

- b) Explain about the instruction set of 8086 microprocessor:
(i) IN (ii) DAA (iii) SBB (iv) NEG (v) CWD (vi) XOR (vii) SAR (viii) ROR
(ix) MOVSW (x) CLI. [5+5]

OR

- 5.a) Write a program in 8086 microprocessor for moving a block of string.
- b) Write a program in 8086 microprocessor for printing reverse of a string. [5+5]

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6.a) Explain about the interfacing of Analog to Digital converter with 8086 microprocessor with a neat sketch.

b) Discuss about the control words and timing diagram of mode 1 strobed input/output in 8255 PPI. [5+5]

QA QA QA QA QA QA QA G

OR

7.a) How to interface the Keyboard/Display controller with 8086 microprocessor by drawing a sketch?

b) Explain about the interfacing of D/A converter with 8086 microprocessor. [5+5]

8.a) Explain the addressing modes of 8051 microcontroller with a neat diagram.

b) Explain about the instruction set of 8051 microcontroller with different addressing modes.

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(i) MOV (ii) XCH (iii) XRL (iv) RLC A (v) ADDC [5+5]

OR

9.a) Discuss about the port 0 and port 1 of 8051 microcontroller with a neat diagram.

b) Name different addressing modes of 8051 and explain them. [5+5]

QA QA QA QA QA QA QA G

10.a) What are the timer interrupts in 8051 microcontroller?

b) How they can be timer interrupts can be programmed in 8051 microcontroller? [5+5]

OR

11.a) What are the external hardware interrupts in 8051 microcontroller?

b) How can the programming be done for external hardware interrupts in 8051 microcontroller? [5+5]

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QA QA QA QA QA QA QA G

QA QA QA QA QA QA QA G