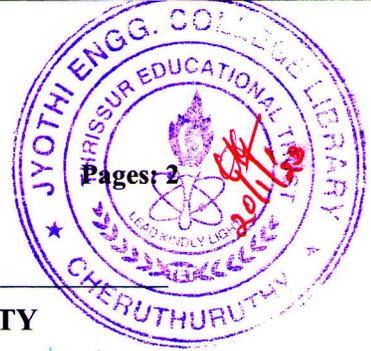


C

06000CS305122003



Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
Fifth Semester B.Tech Degree (S,FE) Examination January 2023 (2015 scheme)

Course Code: CS305

Course Name: MICROPROCESSORS AND MICROCONTROLLERS

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

- | | | Marks |
|---|---|-------|
| 1 | Discuss how 8086 accesses a word in an even and odd address. | (3) |
| 2 | List the flags of 8086. | (3) |
| 3 | Write any three methods for passing parameters to procedures in assembly language programs. | (3) |
| 4 | With suitable example, illustrate the use of instructions i) RCR ii) RCL | (3) |

PART B

Answer any two full questions, each carries 9 marks.

- | | | |
|---|--|-----|
| 5 | Explain the architecture of 8086. | (9) |
| 6 | a) Write an 8086 assembly language program to find the Fibonacci series. | (5) |
| | b) Why do we need Assembler directives? Write any two example of assembler directive with use. | (4) |
| 7 | a) Draw the timing diagram of Minimum mode Read and Write cycles. | (5) |
| | b) Explain the stack operations – PUSH and POP of 8086 | (4) |

PART C

Answer all questions, each carries 3 marks.

- | | | |
|----|---|-----|
| 8 | List the maskable and non maskable interrupts of 8086 | (3) |
| 9 | Draw the architecture diagram of Programmable interrupt controller 8259. | (3) |
| 10 | Briefly describe basic I/O mode operations of Programmable I/O port 8255. | (3) |
| 11 | Write the general procedure of static memory interfacing with 8086. | (3) |

PART D

Answer any two full questions, each carries 9 marks.

- | | | |
|----|---|-----|
| 12 | Explain how the transfer of control is done during the execution of an ISR. | (9) |
| | Draw the structure of Interrupt Vector table in 8086. | |

- 13 a) With diagram, explain the internal architecture of Programmable I/O port 8255. (6)
b) Describe how DMA transfers are done using 8257. (3)
- 14 a) Write the use of Interrupt Request Register (IRR), In Service Register (ISR) and Interrupt Mask Register (IMR) in 8259. (4)
b) What are the different modes of operations of the Keyboard/Display controller 8279? (5)

PART E

Answer any four full questions, each carries 10 marks.

- 15 a) Describe the criteria for selecting a microcontroller. (5)
b) Explain the structure of Program Status Word of 8051 (5)
- 16 Explain the memory addressing of 8051. (10)
- 17 a) Describe the PUSH and POP operations of 8051 Stack (5)
b) Discuss the different types of interrupts in 8051. (5)
- 18 Explain the addressing modes of 8051 (10)
- 19 a) Write an 8051 assembly language program to find the factorial of a number. (6)
b) Write down the operation of following instructions (4)
(i) XCHD (ii) SWAP (iii) CJNE (iv) CPL
- 20 a) Illustrate how 8254 can be used as Divide by N Counter and Square wave generator. (6)
b) Differentiate ACALL and LCALL (4)
