

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2017

Course Code: CS305

Course Name: MICROPROCESSORS AND MICROCONTROLLERS (IT, CS)

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 3 marks.

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|---|--|-------|
| 1 | List the registers used in 8086 microcontroller. | (3) |
| 2 | Describe function of the following signals of 8086.
i) INTR ii) READY iii) HOLD | (3) |
| 3 | State the significance of assembler directives in an assembly language program with suitable examples? | (3) |
| 4 | Compare macro and subroutine? | (3) |

PART B

Answer any two full questions, each carries 9 marks.

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| 5 | Draw and explain the internal block diagram of 8086. | (9) |
| 6 | What are the different addressing modes supported by 8086? Give explanation with suitable examples. | (9) |
| 7 | a) Give the architectural and signal differences between 8086 and 8088?
b) Write an assembly language program to find the largest number from an unordered array of 8-bit numbers? | (4)
(5) |

PART C

Answer all questions, each carries 3 marks.

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| 8 | Describe interrupt cycle of 8086/88 with neat diagram. | (3) |
| 9 | Give description of the following interrupts:
(i) Non maskable (ii) Maskable | (3) |
| 10 | Compare I/O mapped interfacing and memory mapped interfacing. | (3) |
| 11 | Mention the salient features of basic I/O mode operation of 8255. | (3) |

PART D

Answer any two full questions, each carries 9 marks.

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| 12 | a) Interface two 4K x 8 EPROMs and two 4K x 8 RAM chips with 8086. Select suitable address maps.
b) Give a brief description about interrupt service routine. | (6)
(3) |
| 13 | Draw the internal architecture of 8259 and explain. | (9) |
| 14 | Describe different modes of operation of the following peripheral ICs:
i) 8255 ii) 8279 | (6) |

PART E

Answer any four full questions, each carries 10 marks.

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| 15 | a) What are the different types of microcontrollers?
b) What factors are needed to be considered for selecting a microcontroller? | (5)
(5) |
| 16 | Give brief description of memory and I/O addressing of 8051. | (10) |
| 17 | What are different addressing modes supported by 8051? | (10) |
| 18 | Draw the internal architecture of 8051 with brief description. | (10) |
| 19 | Draw and explain the internal architecture of 8254/8253. | (10) |
| 20 | Write an 8051 based assembly language program to perform addition of two 2x2 matrices. | (10) |
