

Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY
FIFTH SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019

Course Code: EE309

Course Name: MICROPROCESSOR AND EMBEDDED SYSTEMS

Max. Marks: 100

Duration: 3 Hours

PART A

Answer all questions, each carries 5 marks.

Marks

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|---|--|-----|
| 1 | The contents of accumulator and B-register are $2A_H$ and AB_H respectively. Find the contents of A-register and flags after the execution of instruction ADD B. | (5) |
| 2 | Write a delay subroutine program in 8085 using one register. Find the maximum delay obtained under this condition. Assume time for one T state is 320ns. | (5) |
| 3 | Explain different mode of operation of 8255. | (5) |
| 4 | Differentiate between Assembler and Compiler. | (5) |
| 5 | List out different bit handling instructions in 8051 and explain its operations. | (5) |
| 6 | Explain the addressing modes of 8051 microcontroller with examples. | (5) |
| 7 | Write an ALP in 8051 to add two 16 bit numbers. | (5) |
| 8 | Explain assembler directives in 8051. | (5) |

PART B

Answer any two full questions, each carries 10 marks.

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| 9 | Write an ALP in 8085 to convert Binary number to BCD number. | (10) |
| 10 | a) Explain machine cycle and T State in 8085. | (5) |
| | b) Explain the significance of stack memory while executing CALL and RET instructions. | (5) |
| 11 | a) Draw the timing diagram for the instruction INR M. | (6) |
| | b) Explain the operation of the following instructions in 8085 (i)MOV A,M (4)
(ii)XCHG | (4) |

PART C

Answer any two full questions, each carries 10 marks.

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| 12 | Design a memory interface of 2K ROM and 4K RAM with 8085 using 2Kx8bit memory chips. | (10) |
| 13 | Explain the Life cycle management of embedded product development. | (10) |
| 14 | a) Draw the interrupt structure of 8085. | (6) |
| | b) Differentiate between Microprocessor and Microcontroller | (4) |

PART D

Answer any two full questions, each carries 10 marks.

- 15 Explain with neat block diagram the architecture of Intel 8051 microcontroller. (10)
- 16 Write an ALP in 8051 to create a square wave with ON time 3ms and OFF time 10ms, on all pins of port 0. Assume XTAL-11.05MHz. (10)
- 17 a) Explain different bit jump and byte jump instructions in 8051. (4)
- b) Explain SCON and SBUF registers in 8051. (6)
