E   **E1200**   **Pages: 2**

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

1   The contents of accumulator and B-register are $2A_H$ and AB_H respectively. Find   (5)
       the contents of A-register and flags after the execution of instruction ADD B.

2   Write a delay subroutine program in 8085 using one register. Find the maximum   (5)
       delay obtained under this condition. Assume time for one T state is 320ns.

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 carries10 marks.

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   (5)
       instructions.

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

PART C
Answer any two full questions, each carries10 marks.

12   Design a memory interface of 2K ROM and 4K RAM with 8085 using 2Kx8bit   (10)
       memory chips.

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   (10)
       10ms, on all pins of port 0. Assume XTAL-11.05MHz.

17   a)   Explain different bit jump and byte jump instructions in 8051.   (4)

      b)   Explain SCON and SBUF registers in 8051.   (6)

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