Dr Supriya Jaiswal
29/11/23 (E)

(180)

Electrical Engineering Department

End Semester Examination

EED-451: Advanced Microprocessor Systems and Microcontrollers

Time: 03 Hour **MM: 50**

Attempt all questions.

Q.1 (a) Explain with help of examples the addressing modes of Microcontroller 8051.

(b) Explain ASSUME; SEGMENT and ENDS; EQU; ORG; NEAR directives of microprocessor 8086/microcontroller 8051. (4+4)

Q.2 What are the features of NDP 8087? Explain interfacing of a co-processor 8087 to a host CPU 8086. (6)

Q.3 Explain bus interface unit and execution unit of microprocessor 8086. (6)

Q.4 Explain the following instructions:

RRC A ; ANL A, #data ; MOV @ R_i , direct ; DJNZ direct, rel ;
MOVX@ R_i, A ; ACALL addr 11. (6)

Q.5 (a) Seven BCD numbers are stored in certain internal RAM locations. Using 8051 instructions, write down a program to find the sum of all the numbers. Result should be in BCD. (3+3)

(b) Write an ALP using 8051 instructions to find number of 1's in a given byte.

Q.6 Explain microprocessor based temperature measurement and control using Microprocessor. Draw flowchart for it and also write down ALP for it. (6)

Q.7 (a) Give advantages of segmented memory in microprocessor 8086.
(b) Explain memory organization in 8051 microcontroller. (3+3)

Q.8 (a) Write an ALP using 8051 instructions to divide the 8-bit data stored in memory location 2500 by the 8-bit data in 2501. Store the quotient in 2502 and remainder in 2503.
(b) Explain the signals which are different when microprocessor 8086 in minimum mode and in maximum mode. (3+3)