2011

M.Sc.

3rd Semester Examination

ELECTRONICS

PAPER—ELC-305

(PRACTICAL)

Full Marks : 50

Time : 3 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

(Microprocessor Programming)

Answer any *one* question, selecting it by a lucky draw.

1. Write an assembly language program to transfer a block of data stored in memory location X050H to X05FH. The data are to be stored from location starting from X300H to X30FH in reverse order. Repeat this process for three different blocks of data.

2. A block of twenty bytes is stored in the user's mem area. This block contains positive, negative, odd, e and zero bytes. Write an assembly language program count there type of bytes present within this block a store the counts in consecutive memory locations. T this program for at least 2 block of data.

3. Write an assembly language program to multiply two bit hexadecimal numbers available from two consecut memory locations, using shift and add method. Store product in a suitable memory location. Find also R = Y – Z, where X, Y and Z are 8-bit numbers. The num Z may be available from a suitable memory location. St the value of R into location just after location where result of product X * Y is stored. Repeat the operat using two sets of X, Y and Z values.

4. Two consecutive memory locations contains two 8- hexadecimal numbers P and Q. Write an assem language program to divide P by Q using shift and subtr method. Store the quotient and remainder in t consecutive memory locations. Repeat the divis operation with three sets of values for X and Y.

5. Write an assembly language program to find the larg number in a given array of 10 elements. The array stored in the memory from X200H onwards. Store result at the end of the array. Repeat the process v three different arrays.

6. Write an assembly language program to arrange 8 b of data in ascending order. The data are stored in mem locations starting from X050H.

7. Write an assembly language program to convert a 2-digit BCD number stored at memory address X200H into its binary equivalent number and store the result in a memory location X300H. Repeat the operation for three different data.

8. Write an assembly language program to find the highest common factor (HCF) of three 8-bit numbers stored in three consecutive memory locations. Store the result in a memory location just after the data locations. Repeat the process with three different sets of data.

9. Three single byte numbers are in three consecutive memory locations. Write an assembly language program to find the LCM of the 3 numbers and to store the result in another memory location. Take at least for 5 sets of data.

10. Write an assembly language program to convert one 8-bit Gray code stored at memory address X200H, into its binary equivalent number and store the result in a memory location X300H. Repeat the operation for 5 different Gray codes.

11. Write an assembly language program to convert one 8-bit binary number stored at memory address XX00H, into its equivalent Gray code and store the result in a memory location XX50H. Repeat the operation for 5 different binary numbers.

12. Write an assembly language program to calculate the square root of a given real number. Store the number and FFH if the number is a perfect square; otherwise an error message FEH, and the result of the prefect square number in the consecutive memory locations. Execute the program for five different numbers.

13. A block of a few bytes whose decimal value is less th or equal to 5 are stored in the user's memory ar consecutively. Write an assembly language program find the factorial of each byte and store the comput value in an ascending order. The length of the data blo is available from a memory location.

14. Write an assembly language program to make an LI blink, the LED being connected to the 8085 μP by 825 interfacing.

15. Connect one common anode 7-segment display to t PORT A of the 8255 IC chip installed in a 8085 μP bas trainer kit (to be supplied) without using decoder/driv IC chip for the display. Write an assembly langua program to display the display the even digits i.e. 0, 2, 6, 8, 0, 2, ... continuously with a time delay rougl abount 1 Sec.

Distribution of Marks

Flow Chart	:	05 Marks
Assembly language program	:	10 Marks
Execution of the program	:	15 Marks
Description of the program	:	05 Marks
Viva-voce	:	10 Marks
Laboratory note book	:	05 Marks
Total	:	50 Marks