PSG COLLEGE OF TECHNOLOGY, COIMBATORE - 4.

ASSEMBLY LANGUAGE PROGRAMMING LABORATORY

PROBLEM SHEET

Context: Logical and Control transfer Instructions

1. Write an assembly language program to move the content in memory location 1100h into register BX and also move to register CX, and also store the content in CX in memory location 1300_H.(Use based indexed addressing mode)
2. Write an assembly language program to find the 1's complement of a number stored in location [0309_H].
3. Write an ALP to swap the contents of AH and AL registers.
4. Write an ALP to count the number of 1's in the register DX
5. Count the number of bytes between the locations 7000 and 8000 that are even numbers. Place the count in register AL.
6. Compare the byte in AL register against the bytes in memory location DS: 1200 H to DS: 1250H. Count the number of matches found in register DX.
7. Write an ALP that will arrange the words placed in registers AX,BX,CX, DX, SI and DI in ascending order with the largest word in AX and smallest word in DI.
8. Write an ALP to transfer the contents of a data block starting from memory location ARRAY1 to another data block starting at memory location ARRAY2. The size of the array should be a minimum of 5 bytes.
   a) Same order
   b) Reverse order
   c) While transferring data, count the number of elements which are greater than a value 99H. and store the result in DL.
9. Write an ALP to transfer the contents of a data block starting from memory location ARRAY1 to another data block starting at memory location ARRAY2. The size of the array should be a minimum of 5 bytes.
10. Write an ALP to find the maximum and minimum of an Array of elements stored in the memory location. The maximum and minimum elements should be stored in AX, BX respectively.
11. Write an ALP to segregate and transfer the contents of a data block starting from memory location ARRAY1 to two data blocks starting at memory location ARRPOS and ARRNEG. The size of the array ARRAY1 should be a minimum of 10 bytes. All positive elements should be transferred to the data block named ARRPOS and all negative elements to the data block named ARRNEG. The zero count may be stored in DL register.
12. Add together all of the 2 byte numbers, stored at memory address 60000_H to 60200_H in memory. Store the sum starting at location 60300_H.

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