

30/5/2016



DOON UNIVERSITY, DEHRADUN

**End Semester Examination, 2015-16
School of Technology
Integrated M.C.A. (5 Years), Semester IV**

STM-528 Microprocessors and Applications

Time Allowed: 3Hours

Maximum Marks: 50

Note: Attempt All the Questions from Sections A, B, C.

SECTION: A

(Marks: 5 × 2=10)

1. Describe the following in short:

- A. Process Control Instructions.
- B. INT 21
- C. Advantages of assembly language over high level language.
- D. NEAR procedure.
- E. Passing parameter in C program to the assembly procedure with example.

SECTION: B

(Marks: 5 × 4=20)

1. Write in detail about the memory organization of 8086 microprocessor.
2. Describe the various steps required to execute an assembly language program. Explain the role of assembler directives by giving an example.
3. How a stack is used in the assembly language. What are the advantages and disadvantages of using stack. Write the mnemonic code for push and pop operations.

(P.T.O.)

4. Write a program to find out the largest number from an unordered array of 16 8-bit numbers stored sequentially in the memory locations starting at offset 0200h in the segment 3000h. Draw the flowchart also.

5. Why we require interfacing among assembly language and high level language. Describe in detail the steps to compete error free interfacing.

SECTION: C

(Marks: $4 \times 5=20$)

1. What are interrupts in context of assembly language? How many types of interrupts is generated in 8086 and how they are tackled. Give a brief description of DOS function call.

2. What are role of array and strings in assembly language? How they are different from high level language. Write string manipulation instructions. Write a program using **movsb** instruction.

3. What are general guidelines to interface an assembly code with C or C++ codes? Write a C program to which uses a assembly language procedure.

4. Write in detail about the three subcategories of bit manipulation instructions. Write a program to find out positive and negative numbers from the given set of data of 12 numbers.

(End of the Paper)