Roll No.:.....

National Institute of Technology, Delhi

Name of the Examination: B. Tech.

Branch: Computer Science Engineering **Semester :III**

Title of theCourse: System Programming **Course Code :CSL 203**

Time:2Hours **Maximum Marks: 25**

Note : All questions are compulsory.

Question number 1 to 4 are of MCQ type. Give brief explanation in justification of your answer.

Q1)Which of the following system software always resides in Main memory (2)
a) Text editor b)Assembler c) Linker d) Loader

Q2) Writing a software in assembly language is preferred over writing in a high level language when? (2)
a) Memory space is limited
b) Optimal use of the available hardware resources is of primary concern
c) Programmers productivity is important
d) Portability is required

Q3) The functions that are completely performed in pass1 of assembler is/are as- (2)
a) Processing of DB pseudo-operation
b) Updating the location counter
c) Processing the DS pseudo operation

Q4) In a two pass assembler, adding literals to a literal table and address resolution of local symbols are done during: (2)
a) 1st pass and 2nd pass respectively
b) 2nd pass
c) 1st pass
d) 2nd pass and 1st pass respectively

Q5) Differentiate between following: (2)
i) USING and BALR pseudo instruction
ii) DC and DS pseudo instruction

Q6) Explain general machine structure. (4)

Q7) Write a program using "Address modification using instruction as data" to add a number stored at relative memory location 1000 with 12 numbers stored in consecutive memory locations (relative starting address 2000) in memory. Explain the program.
[Assume Index register (R1) content is 0, Base register (R2) content is 32] (5)

Q8) Explain open addressing technique for Hash/ Random entry searching. Execute this technique on following numbers 10, 21, 31, 34, 59, 36, 18, 26, 27, 66. Find the 'probes to find' and 'probes to find not'. (4)
[Assume table size is 17]

Q9) Briefly explain databases used by macro processor. (2)