COLLEGE OF ENGINEERING, PUNE

(An Autonomous Institute of Govt. of Maharashtra)

ESE –November 2012

CT 304: SYSTEM PROGRAMMING

Class: - T.Y. B.Tech (Computer Engineering)

Year: - 2012-13 **Semester: - V**

Duration: - 03 hrs **Max. Marks: - 50**

Instructions:

1. ***All the Questions are compulsory.***
2. ***Assume suitable data whenever necessary.***
3. ***Draw neat figures wherever required***
4. ***Figures to right indicate full marks***

Q.1 **A)** Enumerate the data structures used during the first pass of the assembler. Indicate the fields of these data structures and their purpose/usage. **[5]**

B) What are the functions of passes used in two-pass assembler? Explain pass-1 algorithm? **[5]**

OR

C) Define Assembler and give the assembler directives? List of machine dependent and independent assembler futures. Explain any one of them? **[5]**

Q.2 **A)** What is macro-expansion? List the key notions concerning macro expansion. Write an algorithm to outline the macro-expansion using macro-expansion counter. **[5]**

B) What are the advantages and disadvantages of macro pre-processor? **[2]**

OR

C) Pass I of the assembler must also generate the intermediate code for the processed statements. Justify your answer. **[2]**

D) Explain macro definition, macro call and macro expansion? **[3]**

Q.3 **A)** What are the basic functions of loaders? Define and explain absolute loader. **[5]**

B) What are the two different techniques used for relocation? Explain any one technique with suitable example? **[5]**

OR

C) What is dynamic loading? List the advantages of overlay structure. Distinguish between DFA and NFA? **[5]**

Q.4 **A)** Explain the software tools for program developments? **[5]**

B) Explain the types of editors in details? **[5]**

OR

C) Explain analysis and synthesis phase of a compiler. **[5]**

Q.5 **A)** Write a short note on following (Any 4) **[10]**

a) Linkage editor
b) Lexical analysis
c) Recursive macro expansion
d) YACC
e) Dynamic linking