Total No. of Questions : 8] [Total No. of Printed Pages :2

MCSE-204

M.E./M.Tech. II Semester

Examination, June 2013

System Programming

Time : Three Hours

Maximum Marks : 70

Note: Attempt any five questions. All questions carry equal marks.

1. a) Suppose that an instruction involving a forward reference is to be assembled using program counter relative addressing. How might this be handled by a one pass assembler.
   b) Write an algorithm for a two pass macro processor in which all macro definitions are processed in the first pass, and all macro invocations are expanded in the second pass.

2. a) How could a nonrecursive macroprocessor allow for the invocation of macros within macros? What would be the advantages and disadvantages of such an approach?
   b) Suggest a design for a one pass linking loader. What restrictions would be required? What would be the advantages and disadvantages of such a one pass loader?

3. a) In what way might the symbol table used by a compiler be different from the symbol table used by an assembler?
   b) Give a brief note on concurrentisation and vectorisation of programs.

4. a) Briefly explain different techniques available for dynamic storage?
   b) Explain different data structures used for symbol table organization.

5. Explain briefly:
   i) Dynamic compilation
   ii) Loop carried and loop independent dependencies
   iii) Code generation for pipelined machines
   iv) Data partitioning.

6. a) Discuss various issue that arise in the design of distribution operating system?
   b) What are the main advantages of an RPC system teat allows the binding between a client and a server to change dynamically?

7. a) What are the commonly used approaches for user authentication in computer systems? Explain how a user is authenticated in each of these approaches.
   b) Discuss about Amoeba operating system?

8. Write short notes:
   i) Access matrix model
   ii) Memory management
   iii) Fault Tolerance
   iv) Distributed scheduling.