Roll No

MCSE-204

M.E./M.Tech., II Semester

Examination, June 2023

System Programming

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) Give the overview of processors. What are design options of macro processor.
   b) Why linker is important in programming? Discuss the design concept of linker.

2. a) Compare use of the binary search organization and the binary tree organization for constructing the symbol table in a language processor.
   b) Explain briefly syntax error handling and Symbol table conceptual design.

3. a) How many techniques are available for dynamic storage? Explain briefly each of them.
   b) Discuss about different approaches to compiler development. Also discuss machine optimization technique.

4. a) Write unified algorithm for data flow analysis. Also explain bi-directional data flows.

b) Compare local and global optimization. Explain how code is generated for pipelined machine.

5. a) What kinds of source program errors would be detected during code generation?
   b) Distinguish between loop carried and loop independent dependencies.

6. a) Write goals of distributed operating system and discuss its design issues. Explain communication protocols in details.
   b) How does deadlock occur in distributed operating system? Also explain Distributed Deadlock detection technique.

7. a) Explain mechanism for building distributed file system. Also explain distributed scheduling in details.
   b) Write in detail about access matrix model. *What is* cryptography explain with suitable example.

8. a) Discuss about security attacks in distributed systems. Also explain process synchronization.
   b) Write short notes on the following:
      i)   Fault tolerance
      ii) Data partitioning
      iii) RPC in heterogeneous environment

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