

PRACTICE EXAM

Difficulty: MEDIUM

Questions: 10

Operating Systems: File Systems Exam

Instructions: Please answer all questions to the best of your ability. Read each question carefully.

Section 1: Multiple Choice Questions (4 points each, 40 points total)

Instructions: Choose the best answer for each question and mark the corresponding letter.

Question 1: Which of the following is NOT a standard file operation?

- A) Open
- B) Execute
- C) Rename
- D) Delete

Question 2: In general-purpose operating systems, what is the most commonly used file structure?

- A) Tree
- B) Record Sequence
- C) Byte Sequence
- D) Indexed Allocation

Question 3: What is the primary purpose of a file extension?

- A) To determine the physical location of the file on disk.
- B) To indicate the file's creation date.
- C) To identify the file type.
- D) To encrypt the file's contents.

Question 4: Which directory structure is the simplest to implement?

- A) Hierarchical directory systems
- B) Two-level directory systems
- C) Single-level directory systems
- D) Acyclic-graph directory systems

Section 2: Short Answer Questions (6 points each, 30 points total)

Instructions: Answer each question in 2-3 complete sentences.

Question 5: Briefly describe what a file is in the context of operating systems.

Question 6: Explain two reasons why file extensions, although not strictly necessary, are useful.

Question 7: What are at least two important questions that arise when designing a file system?

Section 3: Problem-Solving Questions (10 points each, 30 points total)

Instructions: Answer each question thoroughly. Show your work and explain your reasoning.

Question 8: Describe the steps involved in copying a file using file system calls. Reference functions such as "open", "read", "write", and "close" in your explanation.

Question 9: Explain the concept of contiguous file allocation. What are its advantages and disadvantages compared to other allocation methods (you do not need to name other allocation methods, simply state what makes contiguous allocation beneficial/detrimental)?