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10IS63

Sixth Semester B.E. Degree Examination, Dec.2015/Jan.2016

File Structures

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART - A

- 1 a. What do you mean by file structure? Explain in brief a short history of file structure design. (04 Marks)
b. Bring out the differences between physical files and logical files. (05 Marks)
c. Define the following terms :
i) Seek time ii) Rotational Delay iii) Transfer time (06 Marks)
d. With neat sketch, explain UNIX directory structure. (05 Marks)
- 2 a. What do you mean by a record? Explain different methods for organizing records of a file with an example. (10 Marks)
b. Explain the tools available in UNIX for sequential processing of a file. (04 Marks)
c. Write a Pack() and unpack() methods in C++ for employee id, employee name, employee designation, employee contact number fields for variable length records. (06 Marks)
- 3 a. Explain the different limitations of binary searching and internal sorting. (06 Marks)
b. Explain the algorithm for key sort. (06 Marks)
c. Explain the different operations required to maintain an indexed file. (08 Marks)
- 4 a. Explain how co - sequential processing is implemented in a general ledger program. (10 Marks)
b. Explain how much time merge sort takes to sort a given file. (10 Marks)

PART - B

- 5 a. What do you mean by B - tree? Explain deletion, merging and redistribution of elements on B - tree. (10 Marks)
b. What are paged binary trees? Explain the problems associated with paged binary trees. (06 Marks)
c. Mention the four properties of B* trees. (04 Marks)
- 6 a. Define indexed sequential access. Explain the block splitting and merging due to insertion and deletion in a sequence set with example. (10 Marks)
b. Explain simple prefix B⁺ trees and its maintenance. (10 Marks)
- 7 a. What do you mean by hashing? Explain the simple hashing algorithm with example. (10 Marks)
b. What is collision? Explain the process of collision resolution by progressive overflow. (10 Marks)
- 8 Write a short note on :
i) Linear Hashing ii) AVL trees
iii) Strengths and weakness of CD Rom iv) Pinned Records. (20 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank page.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.