Sixth Semester B.E. Degree Examination, December 2011
File Structures

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions, selecting*
atleast TWO questions from each part.

PART – A

1   a.   In C++ language, how do you perform the following :
         i) Open a file ii) Seek file.   **(06 Marks)**
    b.   Briefly explain how the tracks are organized by blocks. What is the non –data overhead
         involved?   **(07 Marks)**
    c.   Estimate how much tape is needed to store a large file with one million, 100 – byte records.
         The file has to be stored on a 6250 bpi tape that has an inter block gap of 0.3 inches, and
         blocking factor as i) 1 record per block ii) 50 records per block.   **(07 Marks)**

2   a.   What are the various ways of organizing records in a file? Explain each with an example.
                                                                               (10 Marks)
    b.   When is sequential search good? What are the unix tools used for sequential search?
                                                                               (06 Marks)
    c.   Explain the concept of inheritance, using the 10 buffer class hierarchy.   **(04 Marks)**

3   a.   How is keysort used to sort large files? Explain with C++ code.   **(08 Marks)**
    b.   What are inverted lists? How does it improve the secondary index structure? **(08 Marks)**
    c.   What are the possible situations that can occur while upclating the primary or secondary
         keys.   **(04 Marks)**

4   a.   Explain how heapsort overlaps processing and 1/0? Write a C++ pseudocode to build a heap.
                                                                               (10 Marks)
    b.   It is required to sort a file of 800 MB, each record being 100 bytes. If the time to access each
         block takes 11 m sec and the transmission rate approximately. 14500 bytes per msec.
         calculate the total time required to sort using : i) Merge sort ii) Key sort. **(10 Marks)**

PART – B

5   a.   How are the following operations performed in B – tree?
         i) Insertion ii) Deletion iii) Merging of construct using – C S D T A M P I B W and
         elements. Order 4.   **(09 Marks)**
    b.   How does paged binary tree overcome excessive disk accesses? Explain.   **(06 Marks)**
    c.   Calculate the worst – case search depth on B – trees.   **(05 Marks)**

6   a.   Discuss the simple prefix B⁺ tree and its maintanance.   **(12 Marks)**
    b.   With an example, explain how loading of simple prefix B⁺ tree is done.   **(08 Marks)**

7   a.   What is hashing? Explain the simple hashing algorithm.   **(08 Marks)**
    b.   Explain Collision resolution by progressive overflow.   **(08 Marks)**
    c.   How can we delete records from a hashed file? Explain any one method.   **(04 Marks)**

8   a.   Explain the extendible hashing performance.   **(10 Marks)**
    b.   Write short notes on :   i) Buffering strategies   ii) CLV vs CAV.   **(10 Marks)**

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