17IS62

Sixth Semester B.E. Degree Examination, Jan./Feb. 2023
File Structure

Time: 3 hrs.   Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1 a. With an example, explain the field structure organization in file structure. **(10 Marks)**
   b. How to evaluate performance, improve and when to use sequential search? **(10 Marks)**

OR

2 a. Illustrate Journey of byte for the following Instruction.
      write(filename, ch, 1)
      where ch = B. **(10 Marks)**
   b. Explain opening and closing of files in file structure. **(10 Marks)**

Module-2

3 a. Explain various data compression techniques in file structure. **(10 Marks)**
   b. With an example to show improving the secondary index structure using Inverted lists. **(10 Marks)**

OR

4 a. List and explain the operation required to maintain an indexed file. **(10 Marks)**
   b. How reclaiming space is done dynamically for deleted records in fixed length records. **(10 Marks)**

Module-3

5 a. Derive an equation for finding the depth B-tree. Find the depth of tree of order 512 that has 5,00,000 keys. **(10 Marks)**
   b. Illustrate with an example building the heap while reading the file. **(10 Marks)**

OR

6 a. Explain K-way merge algorithm. Construct selection tree for merging large number of list.

List0 → 6, 9, 16	List1 → 8, 18, 22
List2 → 10, 12, 31	List3 → 17, 21, 23
List4 → 11, 13, 20	List5 → 4, 5, 24
List6 → 14, 19, 29	List7 → 7, 15, 28

(10 Marks)
   b. Illustrate indexing with Binary search trees with an example. **(10 Marks)**

Module-4

7 a. How to add a simple index to the sequence set show with an example? **(10 Marks)**
   b. Explain the internal structure of index set block for variable order B-tree with an example. **(10 Marks)**

OR

8 a. How the maintenance of simple prefix B^+ tree is done? **(10 Marks)**
   b. How to use separators instead of key with an example and algorithm? **(10 Marks)**

Module-5

9 a. Write simple hasing algorithm. Find the address for the following key (Field size 12) :
    (i) WELL
    (ii) LOW **(10 Marks)**
   b. Explain different collosion resolution by progressive overflow. **(10 Marks)**

OR

10 a. How extendible hashing works? **(10 Marks)**
    b. Explain alternative approaches of extendible hashing. **(10 Marks)**

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