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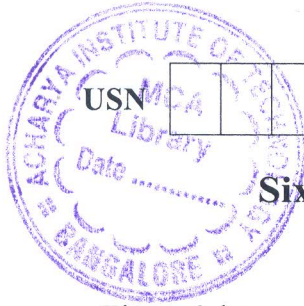
Sixth Semester B.E. Degree Examination, Jan./Feb. 2023
File Structures

Time: 3 hrs.   Max. Marks: 100

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

Module-1

1 a. What are physical and Logical files? Write a program to read and display the contents of file using C and C++ streams? **(08 Marks)**
   b. Calculate the space required on a tape, if we want to store 1 million 100 byte records on a 6250 – bpi tape that has an interblock gap of 0.3 inches with a physical length of data block of 0.016 inch. Hence calculate the space required. **(04 Marks)**
   c. Explain the layers of procedures involved in transmitted a byte from program data area to a file on a disk? **(08 Marks)**

OR

2 a. What are the different ways of adding structure to a file to maintain identify of records? Explain each with an example. **(10 Marks)**
   b. Write a program to read and write student objects with fixed – length records and fields delimited by "1" (pipeline)·Implement pack( ), unpack( ), modify( ) and search ( ) methods. **(10 Marks)**

Module-2

3 a. What is an Index? What are the Operations required to maintain an index file? **(10 Marks)**
   b. Explain key sort techniques and limitation with an algorithm. **(10 Marks)**

OR

4 a. What is data compression? Explain need of data compression with different compression techniques. **(10 Marks)**
   b. Explain in brief, how spaces in files can be reclaimed with an example. **(10 Marks)**

Module-3

5 a. Define consequential processing. Explain matching of names in two list with example and write the match function based on a single loop. **(10 Marks)**
   b. Explain the general Ledger program for implementing consequential process. **(10 Marks)**

OR

6 a. Construct a B-tree for the following set of key (order 4). Show every step clearly
      C S D T A M P I B W N G U R. **(10 Marks)**
   b. What is a B-Tree? List the properties of B-Tree and write the rules for deleting the key from a node in a B-tree. **(10 Marks)**

Module-4

7 a. What is Indexed Sequential Access? With an example, explain maintain a sequence set.

   (10 Marks)

   b. What is simple prefix B$^+$ tree? Explain with an example. (10 Marks)

OR

8 a. Explain in detail, the Internal structure of Index Set Block. (10 Marks)

   b. Explain in brief the loading of a simple prefix B$^+$ tree. (10 Marks)

Module-5

9 a. Define Hashing. Explain Simple Hashing algorithm with an example. (10 Marks)

   b. Explain double Hashing and chained progressive overflow in detail. (10 Marks)

OR

10 a. Explain the working of extendible Hashing. (10 Marks)

   b. Explain the following with appropriate diagrams
       i) Dynamic Hashing
       ii) Linear Hashing (10 Marks)

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