CBCS SCHEME

USN | | | | | | | | | | |

18IS61

Sixth Semester B.E. Degree Examination, July/August 2022
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. Explain C++ functions to perform the following Operations with necessary arguments of the function : i) Open ii) Read iii) Write iv) Seek. **(12 Marks)**

b. Design a Class Course Registration. Each object represents the enrolment of a student in a course. Members should be included for a Course Id , Student Id , Number of credit hours and Course grade. Add methods to class, to read registration field values from input stream and to write the fields of an object to an output file stream. Use C++ stream operations to implement these methods. **(08 Marks)**

OR

2 a. Explain Data Organization on a disk and also discuss the different costs of disk access with typical values. **(12 Marks)**

b. What are different ways of adding structure to a file to maintain the identity of fields? Explain each with an example. **(08 Marks)**

Module-2

3 a. Convert the string "AAAAAAA BBBB CC DDDDDDDDD EE F" into compressed codes by constructing i) Huffman tree and ii) Run length coding. Determine the percentage of compression for both the techniques. **(10 Marks)**

b. Discuss the limitations of retrieving the records using secondary keys. Explain the solution by using "Linking the list of references" technique. **(10 Marks)**

OR

4 a. How spaces can be reclaimed from deleting records from :
i) Fixed length record and ii) Variable length records file. **(12 Marks)**

b. Explain the Key Sorting Technique and its limitations. **(08 Marks)**

Module-3

5 a. Write C++ program Snippets for Co-sequential matching and merging with an example. **(12 Marks)**

b. Explain K – Way Merge algorithm with an example. **(08 Marks)**

OR

6 a. With a neat diagram, explain Paged Binary trees. What are its disadvantages? **(08 Marks)**

b. Explain Deletion , Merging and Redistribution of elements in B - Tree. **(12 Marks)**

Module-4

7 a. What is an Indexed Sequential Access? Discuss the maintenance of a Sequence set. **(08 Marks)**

b. Discuss the maintenance of Simple Prefix B+ Tree in the following cases :
i) Changes localized to single block in the sequence set.
ii) Changes involving multiple blocks in the sequence set. **(12 Marks)**

OR

8 a. Discuss the sequences of loading a Simple prefix B+ Tree. **(12 Marks)**

b. Compare B Tree , B+ Tree and Simple prefix B+ Trees. **(08 Marks)**

Module-5

9 a. Explain the following Collision Resolution techniques :

i) Chained Progressive Overflow ii) Chaining with a separate overflow area. **(10 Marks)**

b. Discuss the issues involved in deletion and insertion of keys in progressive overflow method. **(10 Marks)**

OR

10 a. Explain the working of Extendible hashing. **(10 Marks)**

b. Write short notes on :

i) Linear hashing ii) Dynamic hashing. **(10 Marks)**

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