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10IS63

Sixth Semester B.E. Degree Examination, Jan./Feb. 2021
File Structures

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. Discuss about the fundamental file processing operations. **(09 Marks)**
b. What are the major strengths and weakness of CD-ROM? **(05 Marks)**
c. Differentiate between the following :
i) Physical life and logical file
ii) Constant Liner Velocity (CLV) and Constant Angular Velocity (CAV). **(06 Marks)**

2 a. Explain the different ways of adding structures to files to maintain the identity of fields. **(08 Marks)**
b. Write brief note on :
i) Performance of sequential search
ii) Direct access. **(08 Marks)**
c. Discuss the importance of header records for a record file. With an example. **(04 Marks)**

3 a. Build the Huffman tree and code the input symbols for the following sequence :

Symbol	p	r	a	o	s	i	g	c
Probability	2	5	3	0.5	2	1	2.5	4

(10 Marks)
b. Define internal and external fragmentation. Describe the remedial measures to minimize fragmentation. **(05 Marks)**
c. How indexing is done that is too large to hold in memory? **(05 Marks)**

4 a. Describe how co-sequential processing is implanted in a general ledger program. **(08 Marks)**
b. Write an algorithm to build heap. Implement the heap sort algorithm on the given list : 6, 4, 3, 7, 8, 10, 2. **(12 Marks)**

PART - B

5 a. Write a C++ code for method search( ) in B-tree. **(05 Marks)**
b. For the given sequence "Q, W, E, R, T, Y, U, I, O, P, A, S, D, F, G, H". Show how B-tree of order 4, is constructed stepwise. **(10 Marks)**
c. Briefly explain Paged binary trees. **(05 Marks)**

6 a. Explain the concept of indexed sequential access. **(05 Marks)**
b. Explain simple prefix B^+ tree with example. **(05 Marks)**
c. With suitable diagrams, explain the internal structure of index set block. **(10 Marks)**

7 a. What is hashing? Explain a simple hashing algorithm. **(10 Marks)**
b. List the various methods used to avoid collision and discuss any two methods in detail with suitable example. **(10 Marks)**

8 a. Explain the working of extendible hashing with suitable example. **(10 Marks)**
b. What are buddy buckets? Explain deletion in extendible hashing. Write the procedure for finding buddy buckets. **(10 Marks)**

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