19NMB10

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BVoc DEGREE EXAMINATION MAY 2024
(Second Semester)

Branch – **NETWORKING & MOBILE APPLICATION**

DATA STRUCTURES

Time: Three Hours Maximum: 50 Marks

SECTION-A (5 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (5 x 1 = 5)

1. Which Operator is used to Concatenate two Strings?
   (i) || (ii) &
   (iii) + (iv) !

2. Which schemes use a randomization approach?
   (i) Hashing by division (ii) Hashing by multiplication
   (iii) Universal hashing (iv) open addressing

3. Which Linked List Stores the Two Pointer nodes Store null values?
   (i) Single Linked List (ii) Double Linked List
   (iii) Circular Linked List (iv) None of the above

4. In a queue, the initial values of front pointer f rare pointer r should be …….. and …….. respectively.
   (i) 0 and 1 (ii) 0 and -1
   (iii) 1 and 0 (iv) -1 and 0

5. The no of external nodes in a full binary tree with n internal nodes is
   (i) n (ii) n+1
   (iii) 2n (iv) 2n+1

SECTION - B (15 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 3 = 15)

6 a Explain about the concept of Pointers.
OR
b Write short notes on Sparse Matrix.

7 a Describe the concept of Radix Sort.
OR
b Write short note on Sequential Search.

8 a Explain about Dynamic Memory Allocation.
OR
b Write notes on Double Linked List.

9 a Write note on Queue Operations.
OR
b Explain about short Circular Queue.

10 a List out the types of BST Traversing.
OR
b Write short note on Tree Applications.

Cont…

SECTION -C (30 Marks)

Answer **ALL** questions
ALL questions carry **EQUAL** Marks (5 x 6 = 30)

11 a Briefly explain about Characteristics of Data Structure.

OR

b Write detail notes on String Processing.

12 a Explain in detailed about Insertion and Selection Sort.

OR

b Explain briefly about Binary Searching.

13 a Describe the concept of Types of Linked List.

OR

b Brief notes on Dynamic Memory Allocations.

14 a Write detail note on Infix and Postfix with Applications.

OR

b Explain in detailed about Queue and Priority Queue.

15 a Describe the concept of Tree Traversal.

OR

b Write the algorithm of Tree Insertion and Deletion.

Z-Z-Z END