

Seat No: _____
[35 & A-41]

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SARDAR PATEL UNIVERSITY

B.C.A. Semester - 3 Examination Nov-2016

US03BCA03 (Advanced Data and File Structure)

DATE: 24/11/2016, Thursday
Time: 02:00 P.M To 5:00 P.M

Marks:70

Q:1 Give Answers of following Multiple Choice Questions [10]

- [1] Index is also known as _____.
 - a. Subscript
 - b. Base
 - c. Non-subscript
 - d. Type
- [2] Tree is a _____ data structure.
 - a. Linear
 - b. Variable
 - c. Non-linear
 - d. Non-subscript
- [3] A binary tree has at most _____ child.
 - a. Two
 - b. One
 - c. Three
 - d. None of these
- [4] A digraph is known as _____ graph.
 - a. Directed graph
 - b. Double graph
 - c. Multiple graph
 - d. Undirected graph
- [5] _____ technique requires an unordered table to search a particular record in the table.
 - a. Binary search
 - b. Sorting
 - c. Sequential search
 - d. None of these
- [6] There are at most _____ passes required to perform bubble sort.
 - a. $n - 1$
 - b. $n + 1$
 - c. n
 - d. $n / 2$
- [7] The collection of files is known as _____.
 - a. Data file
 - b. Database
 - c. File
 - d. None of these
- [8] The open addressing and chaining are two classes of _____ techniques.
 - a. Collision Resolution
 - b. Blocking
 - c. Hashing
 - d. None of these
- [9] The process of finding the data from its data structure is called _____.
 - a. Searching
 - b. Sorting
 - c. Deletion
 - d. None of these
- [10] The lowest level of index is _____.
 - a. Track index
 - b. Prime index
 - c. Index area
 - d. Master index

Q:2 Do as directed (Attempt Any Ten) [20]

- [1] What is the upper bound and lower bound of an array?
- [2] Define root and leaf of a tree.
- [3] Define tree with an example.
- [4] Draw the Binary Tree for $(A-B)+c*(E/F)$.
- [5] Define isolated vertex and null Graph.
- [6] What is connected Graph?
- [7] Define sorting. Also list the sorting techniques.
- [8] Define merge sort.

- [9] Difference between Searching and sorting.
- [10] Define File organization and list out different types of file organization.
- [11] Define Bucket Capacity.
- [12] Define: File, Database
- Q:3** A Explain 2-D array with declaration and initialization. 5
- B Explain address calculation of 2-D array element with example. 5
- OR**
- Q:3** A Define array. Explain 1-D array with declaration and initialization. 5
- B Explain Sparse Matrix in detail. 5
- Q:4** A Explain the representation of Binary tree. 5
- B Explain the insertion of a node in a binary tree with an example. 5
- OR**
- Q:4** A What are the types of traversal of Binary tree? Explain any two with an example. 5
- B Explain the deletion of a node from a binary tree with an example. 5
- Q:5** A Write down the algorithm of bubble sort. 5
- B Write down the algorithm of Sequential search. 5
- OR**
- Q:5** A Write down the algorithm of selection sort. 5
- B Define the all step of bubble sort as an ascending order of following data: 5
- 55, 22, 77, 92, 12
- Q:6** Write a short note on Sequential File. 10
- OR**
- Q:6** Write a short note on index sequential file supported by IBM. 10
