Department of Information Technology
Innovative Teaching Methods

Activity Title	Technical Quiz
Faculty Name/Department	Mrs.M.Jeba Malar
Mapped Course Name & Code	CD3291 Data Structures & Algorithms
Date	26.10.2022
Benefitted Students (Year / Sem / Dept)	II year / 3rd sem / B.Tech. Information Technology
Topic	Sorting & Searching
Description	The Data Structures and Algorithms Quiz is a knowledge assessment aimed at evaluating participants' understanding of fundamental concepts in computer science. This quiz typically consists of a series of questions and problems related to data structures and algorithms. Participants are tested on their knowledge of various data structures like arrays, linked lists, trees, and graphs, as well as their understanding of key algorithms, such as searching, sorting, and graph traversal. The quiz may cover topics ranging from basic terminology and principles to more advanced problem-solving techniques. Participants are often required to analyze and choose appropriate data structures and algorithms to solve specific problems.
Course Outcomes (CO)	CO2: understands the importance of Geometric modelling.
Performance Indicator (PI)	PI 1.4.1
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Activity Photos	

Topics/ Questions:

Q1 Provide the format for the representation of string in the memory in C language?

1. Represented as an array of characters
2. Can be represented as an object of some type of class
3. Could be the same just as the other primitive data types
4. Could be the Linked list of Characters

Answer: 1

The correct way for the representation of string in the memory in C language is represented as an Array of Characters.

Q2 Can you tell the advantage of using the array data structure among the following statements?

1. The entities of mixed type of data types could be easily stored
2. The access to the elements present in the array is a little easy
3. Always the index number of the first element present starts from the number 1
4. None of the above

Ans: 2 is the correct answer because, in an array, the elements present are stored in the block of memory. So it becomes easy to access it.

Q3 Which among the following is the queue data structure's applications?

1. When among the many or multiple users, a resource is shared.
2. Balancing of the load.
3. When the transferring of the data is asynchronous
4. All of the above

Answer: 4 All the above as all these features are the applications of queue type of data structure

Q4 Name the type of data structure among the following that could be used to implement queues?

1. Linked List type of data structure
2. Arrays type of data structure
3. Stack type of data structure
4. All of the above following type

Answer: 4 As all the above following options could be used for the implementation of queues, option 4 is the right answer.

Q5 Among the following options, which of the following type of data structure is used in recursion?

1. Queues type of data structure
2. Array type of data structures
3. List type of data structures
4. Stack type of data structures

Answer: 4 In recursion, the type of data structure that finds its use is the Stack type of data structure.

Q6 The data structure that allows the insertion, as well as the deletion from both the ends, are:

1. String type of data structure
2. Queue type of data structure
3. Stack type of data structure
4. Dequeue type of data structure

Answer: 4 The type of data structure that allows insertion, as well as the deletion from both the ends, is the dequeue type of data structure.

Q7 For getting best time complexity in the worst case scenario, which type of sorting algorithms are used?

1. Bubble sort of algorithm
2. Selection sort of algorithm
3. Quick sort of algorithm
4. Merge sort of algorithm

Answer: 4 because among the following, merge sort of algorithm is used.

Q8 For processing queries on trees, which of the following algorithm is ised and found to be highly useful?

1. Centroid type of algorithm
2. Heavy Light Decomposition type of algorithm
3. Both A and B are correct

4. None of the above

For handling the queries on trees, both centroid as well as the heavy light decomposition type of algorithm are used.

Marks:

Group Name (if ITM is a group activity)	Reg No.	Topic /	Marks (10)	(10)	Total
A	5001-15	Data types, Operations	7	10	17
B	5016-30	Looping, Branching	10	8	18
C	5031-48	Hashing, OOPS	10	10	20
D	5049-60, 301-306,501	Sorting and Searching	09	10	19

Outcome:

CO1 Implement abstract data types
CO2 Design implement and analyse linear data structures such as queue and stack
CO3 Implement searching and sorting algorithms