Course/Branch : B.E/ECE	**Year / Semester** :II/III	Format No.	NAC/TLP-07a.13
Subject Code :EC8393	**Subject Name** :Fundamentals of Data Structures in C	Rev. No.	02
Unit No :5	**Unit Name** : Searching And Sorting Algorithms	Date	30.09.2020

OBJECTIVE TYPE QUESTION BANK

S. No.	Objective Questions (MCQ /True or False / Fill up with Choices)	BTL
1.	Where is linear searching used? a) When the list has only a few elements b) When performing a single search in an unordered list c) Used all the time **d) When the list has only a few elements and When performing a single search in an unordered list**	L2
2.	Which of the following is a disadvantage of linear search? a) Requires more space **b) Greater time complexities compared to other searching algorithms** c) Not easy to understand d) Not easy to implement	L4
3.	Linear search(recursive) algorithm used in _____ **a) When the size of the dataset is low** b) When the size of the dataset is large c) When the dataset is unordered d) Never used	L5
4.	Which of the following is not an application of binary search? a) To find the lower/upper bound in an ordered sequence b) Union of intervals c) Debugging **d) To search in unordered list**	L1
5.	Binary Search can be categorized into which of the following? a) Brute Force technique **b) Divide and conquer** c) Greedy algorithm d) Dynamic programming	L4
6.	Given an array arr = {45,77,89,90,94,99,100} and key = 100; What are the mid values(corresponding array elements) generated in the first and second iterations? **a) 90 and 99** b) 90 and 100 c) 89 and 94 d) 94 and 99	L5
7.	How many passes does an insertion sort algorithm consist of? a) N **b) N-1** c) N+1 d) N^2	L1
8.	Which of the following algorithm implementations is similar to that of an insertion sort? **a) Binary heap** b) Quick sort c) Merge sort d) Radix sort	L1
9.	For the following question, how will the array elements look like after second pass? 34, 8, 64, 51, 32, 21 a) 8, 21, 32, 34, 51, 64 b) 8, 32, 34, 51, 64, 21 c) 8, 34, 51, 64, 32, 21	L1

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	d) 8, 34, 64, 51, 32, 21	
10.	What is an external sorting algorithm? **a) Algorithm that uses tape or disk during the sort** b) Algorithm that uses main memory during the sort c) Algorithm that involves swapping d) Algorithm that are considered 'in place'	L4
11.	Which of the following is not an advantage of optimised bubble sort over other sorting techniques in case of sorted elements? a) It is faster b) Consumes less memory **c) Detects whether the input is already sorted** d) Consumes less time	L5
12.	Merge sort uses which of the following technique to implement sorting? a) backtracking b) greedy algorithm **c) divide and conquer** d) dynamic programming	L5
13.	Which of the following method is used for sorting in merge sort? **a) merging** b) partitioning c) selection d) exchanging	L2
14.	Which of the following is not in place sorting algorithm? **a) merge sort** b) quick sort c) heap sort d) insertion sort	L4
15.	Which of the following sorting algorithms is the fastest? a) Merge sort **b) Quick sort** c) Insertion sort d) Shell sort	L5
16.	Quick sort follows Divide-and-Conquer strategy. **a) True** b) False	L1
17.	Find the pivot element from the given input using median-of-three partitioning method. 8, 1, 4, 9, 6, 3, 5, 2, 7, 0. a) 8 b) 7 c) 9 **d) 6**	L3
18.	Which of the following is correct with regard to insertion sort? **a) insertion sort is stable and it sorts In-place** b) insertion sort is unstable and it sorts In-place c) insertion sort is stable and it does not sort In-place d) insertion sort is unstable and it does not sort In-place	L2
19.	Insertion sort is an example of an incremental algorithm. **a) True**	L1

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	b) False	
20.	Which of the following is good for sorting arrays having less than 100 elements? a) Quick Sort b) Selection Sort c) Merge Sort **d) Insertion Sort**	L2
21.	What is a hash table? a) A structure that maps values to keys **b) A structure that maps keys to values** c) A structure used for storage d) A structure used to implement stack and queue	L1
22.	If several elements are competing for the same bucket in the hash table, what is it called? a) Diffusion b) Replication **c) Collision** d) Duplication	L2
23.	What is a hash function? a) A function has allocated memory to keys **b) A function that computes the location of the key in the array** c) A function that creates an array d) A function that computes the location of the values in the array	L4
24.	Which of the following is not a technique to avoid a collision? a) Make the hash function appear random b) Use the chaining method c) Use uniform hashing **d) Increasing hash table size**	L5
25.	What is the load factor? a) Average array size b) Average key size **c) Average chain length** d) Average hash table length	L1
26.	What is simple uniform hashing? **a) Every element has equal probability of hashing into any of the slots** b) A weighted probabilistic method is used to hash elements into the slots c) Elements has Random probability of hashing into array slots d) Elements are hashed based on priority	L1
27.	The case in which a key other than the desired one is kept at the identified location is called? a) Hashing **b) Collision** c) Chaining d) Open addressing	L1
28.	What data organization method is used in hash tables? a) Stack b) Array **c) Linked list** d) Queue	L3
29.	Which of the following is not a collision resolution technique? a) Separate chaining	L1

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	b) Linear probing c) Quadratic probing **d) Hashing**	
30.	Which of the following operations are done in a hash table? a) Insert only b) Search only **c) Insert and search** d) Replace	L2