

# Online Examinations (Even Sem/Part-I/Part-II Examinations 2020 - 2021)

Course Name - --Data Structures & Algorithm

Course Code - DCSE203

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Answer all the questions. Each question carry one mark.

9. 1. Algorithm is

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- Step by step process to solve a problem
- Pictorial representation to solve a problem
- Solving a problem anyhow
- All of these

10. 2. The omega notation represents

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- Upper bound
- Lower bound
- Tight bound
- No bound

11. 3. What does it mean when we say that an algorithm X is asymptotically more efficient than Y?

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- X will always be a better choice for small inputs
- X will always be a better choice for large inputs
- Y will always be a better choice for small inputs
- X will always be a better choice for all inputs

12. 4. .... is pictorial representation of an algorithm.

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- Program
- Diagram
- Picture
- Flowchart

13. 5.  $O(1)$  mean

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- Time is constant
- Time is quadratic
- Time is linear
- Time is logarithm

14. 6.  $O(\log n)$  mean

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- Time is constant
- Time is quadratic
- Time is linear
- Time is logarithm

15. 7. Column major order is a method to arrange elements sequentially .....

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- Column wise
- Row wise
- Table wise
- Linear wise

16. 8. In sparse matrix, most elements are

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0

empty

1

2

17. 9. Array is a collection of

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Homogenous elements

Heterogeneous elements

Both (a) & (b)

None of these

18. 10. Elements of an array are stored in

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Linear manner

Random manner

Contiguous manner

Top to bottom manner

19. 11. .... follow FIFO method.

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- Stack
- Queue
- Linked List
- Circular Linked List

20. 12. Which of the following is not a type of Linked list?

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- Singly Linked List
- Doubly Linked List
- Straight Linked List
- Circular Linked List

21. 13. .... memory allocation is used in Linked list.

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- static
- dynamic
- linear
- random



22. 14. In singly Linked list, the pointer is pointing to the

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- Middle element
- Next element
- First element
- Last element

23. 15. Each data-address pair in Linked list is called

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- Node
- Head
- Pointer
- Data

24. 16. In circular Linked list, the last pointer holds the address of

*Mark only one oval.*

- Previous node
- First node
- Next node
- Null

25. 17. Traversing back is not possible in which type of Linked list?

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- Singly Linked List
- Doubly Linked List
- Straight Linked List
- Circular Linked List

26. 18. Traversal in Linked list always begins with

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- Second node
- Last node
- First node
- Third node

27. 19. Insertion operation in stack is called

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- Pop
- Push
- Insert
- Delete

28. 20. How many end/s are used in stack data structure?

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1

2

3

4

29. 21. The value of top (tos) when stack is empty

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0

-1

1

2

30. 22. Which of the following is used to calculate postfix expression?

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Stack

Linked list

Queue

Graph

31. 23. The postfix representation of  $A*B+C$

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$AB*C+$

$A*B+C$

$ABC*+$

$BC+A*$

32. 24. Which of the following is used to calculate prefix expression?

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Stack

Linked list

Queue

Tree

33. 25. Insertion in queue is done through ..... end.

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front

rear

back

last

34. 26. Dequeue is a process of

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- Insertion
- Searching
- Deletion
- Traversal

35. 27. What is the value of front when queue is empty?

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- 0
- 1
- 1
- 2

36. 28. LIFO mean

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- Last in first out
- Last input first out
- Last in first output
- Last input first output

37. 29. In circular queue, the value of rear is ..... where MAX is the size of queue.

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- Rear = rear +1
- Rear = (rear +1) % MAX
- Rear = rear - 1
- Rear = (rear -1) % MAX

38. 30. Which of the following is a linear data structure?

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- Array
- Linked list
- Stack
- All of these

39. 31. Which of the following is used to define a node in Linked list?

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- Structure
- Variable
- Array
- All of these

40. 32. Node in Linked list is created at .....

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- Compile time
- Statically
- Runtime
- Any time

41. 33. Pop operation in Stack give error when

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- Stack is empty
- When stack is partially filled
- Stack is full
- Never gives error

42. 34. The value of postfix expression  $3574-2^{*+}$  is

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- 48
- 50
- 45
- 41

43. 35. The address of the first element of an array is generally called

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- First address
- Base address
- Start address
- Last address

44. 36. Index of an array starts with

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- 0
- 2
- 1
- 1

45. 37. Which of the following is best suited for reversing?

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- Stack
- Linked list
- Queue
- List



46. 38. When the start pointer of Linked list is Null, it is called as

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- Underflow
- Empty
- Overflow
- Full

47. 39. Which of the following does not related to queue?

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- push
- front
- rear
- circular

48. 40. The elements a, b, d, c, e are inserted in queue, the order of deletion is

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- abcde
- adbce
- abdce
- abedc

49. 41. Pointer is used in singly Linked list to point to the .....

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- Null
- Next node
- Start of the node
- Last node

50. 42. Traversing both way is possible in

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- Singly Linked list
- Circular Linked list
- Doubly Linked list
- All of these

51. 43. Deletion of an element is performed first in priority queue having

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- High priority
- Same priority
- Low priority
- No priority

52. 44. Insertion operation, if the capacity of stack is full gives

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- Stack overflow
- Stack no flow
- Stack underflow
- None of these

53. 45. Students standing in a line, roll number wise is an example of

*Mark only one oval.*

- Stack
- Graph
- Queue
- Tree

54. 46. Structure defined to create a node in Linked list is

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- homogenous
- heterogeneous
- Both (a) &(b)
- None of these

55. 47. The average case time complexity of merge sort is

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- $O(n^2)$
- $O(n)$
- $O(\log n)$
- $O(n \log n)$

56. 48. Which of the following sorting work best on almost sorted array?

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- Insertion
- Merge
- Quick
- Heap

57. 49. .... data structure is useful in implementation of quick sort.

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- BST
- Stack
- List
- Queue

58. 50. The number of iterations in selection sort (ascending order) of an array = {3,4,5,2,1} are

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- 3
- 2
- 4
- 5

59. 51. Quick sort follows

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- Divide & conquer
- Brute force technique
- Greedy algorithm
- Dynamic programming

60. 52. In max heap structure, greatest key is always associated with an element in the

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- Leaf node
- First node of left sub tree
- Root node
- First node of right sub tree

61. 53. Merge sort works on the principle of

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- Divide & conquer
- Brute force technique
- Greedy algorithm
- Dynamic programming

62. 54. In first iteration, the merge sort algorithm divides the array into ..... sub arrays.

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- 5
- 2
- 3
- 4

63. 55. The sorting where adjacent elements are swapped is

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- Bubble sort
- Merge sort
- Heap sort
- Quick sort

64. 56. The sorting (ascending order) in which the minimum value element is selected and placed at the beginning is

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- Bubble sort
- Insertion sort
- Selection sort
- Quick sort

65. 57. The sorting where an element is selected as a pivot and the array is partitioned based on it is

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- Bubble sort
- Insertion sort
- Selection sort
- Quick sort

66. 58. The process of finding a desired element out of many elements is called

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- arranging
- inserting
- sorting
- searching

67. 59. The complexity of linear searching is

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- $O(n^2)$
- $O(n)$
- $O(\log n)$
- $O(n \log n)$

68. 60. The best case complexity of hashing for searching is

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- $O(n^2)$
- $O(1)$
- $O(\log n)$
- $O(n \log n)$

69. 61. The fastest way to store and search data is

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- Sorting
- Hashing
- Both (a) & (b)
- Indexing



70. 62. Hashing is used for

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- Searching
- Deleting
- Sorting
- Traversing

71. 63. Which of the following hash function is used in division method?

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- $h(k) = k/m$
- $h(k) = m/k$
- $h(k) = k \bmod m$
- $h(k) = m \bmod k$

72. 64. The use of hashing is to search that takes

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- $O(1)$  time
- $O(n)$  time
- $O(\log n)$  time
- $O(n \log n)$  time

73. 65. Hash function is

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- A function that creates an array
- A function has allocated memory to keys
- A function that computes the location of the key in the array
- None of these

74. 66. The process where elements are competing for the same bucket is

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- Collision
- Diffusion
- Duplication
- Replication

75. 67. The element (1256) will be placed at position ..... using division method provided size of hash table is 10 and indexing start with 1.

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- 17
- 7
- 16
- 6

76. 68. What can be done to avoid collision?

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- Use of uniform hashing
- Making random hash function
- Use of chaining method
- All of these

77. 69. A tree is a ..... data structure.

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- Linear
- Line
- Non Linear
- Consecutive

78. 70. The starting node of a tree is called

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- Root node
- Right node
- Left node
- Middle node

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