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

Course Name - –Data Structures & Algorithm
Course Code - DCSE203

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- ( ) Bachelor of Pharmacy
- ( ) B.TECH.(CSE)
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- ( ) BCA
- ( ) B.SC.(CS)
- ( ) B.SC.(BT)
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- ( ) BBA
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- ( ) B.A.(JMC)
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◯ DIP.ME

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◯ M.SC.(MATH)

◯ M.SC.(MB)

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◯ M.SC.(MSJ)

◯ M.SC.(AM)

◯ M.SC.CS)

◯ M.SC.(ANCS)

◯ M.SC.(MM)

◯ B.A.(Eng)

Answer all the questions. Each question carry one mark.

9. 1. Algorithm is

Mark only one oval.

◯ 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

Mark only one oval.

◯ 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?

Mark only one oval.

◯ 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.

Mark only one oval.

◯ Program

◯ Diagram

◯ Picture

◯ Flowchart
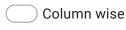
13.   5. O(1) mean

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◯ Time is constant

◯ Time is quadratic

◯ Time is linear

◯ Time is logarithm

14.   6. O(log n) mean

Mark only one oval.

◯ Time is constant

◯ Time is quadratic

◯ Time is linear

◯ Time is logarithm

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

Mark only one oval.

◯ Column wise

◯ Row wise

◯ Table wise

◯ Linear wise

16. 8. In sparse matrix, most elements are

Mark only one oval.

- ⬭ 0
- ⬭ empty
- ⬭ 1
- ⬭ 2

17. 9. Array is a collection of

Mark only one oval.

- ⬭ Homogenous elements
- ⬭ Heterogeneous elements
- ⬭ Both (a) & (b)
- ⬭ None of these

18. 10. Elements of an array are stored in

Mark only one oval.

- ⬭ Linear manner
- ⬭ Random manner
- ⬭ Contiguous manner
- ⬭ Top to bottom manner

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

Mark only one oval.

( ) Stack
( ) Queue
( ) Linked List
( ) Circular Linked List

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

Mark only one oval.

( ) Singly Linked List
( ) Doubly Linked List
( ) Straight Linked List
( ) Circular Linked List

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

Mark only one oval.

( ) static
( ) dynamic
( ) linear
( ) random

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

Mark only one oval.

    ◯ Middle element

    ◯ Next element

    ◯ First element

    ◯ Last element

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

Mark only one oval.

    ◯ 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?

Mark only one oval.

◯ Singly Linked List

◯ Doubly Linked List

◯ Straight Linked List

◯ Circular Linked List

26.   18. Traversal in Linked list always begins with

Mark only one oval.

◯ Second node

◯ Last node

◯ First node

◯ Third node

27.   19. Insertion operation in stack is called

Mark only one oval.

◯ Pop

◯ Push

◯ Insert

◯ Delete

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

Mark only one oval.

○ 1

○ 2

○ 3

○ 4

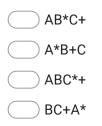29.   21. The value of top (tos) when stack is empty

Mark only one oval.

○ 0

○ -1

○ 1

○ 2

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

Mark only one oval.

○ Stack

○ Linked list

○ Queue

○ Graph

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

Mark only one oval.

○ AB*C+

○ A*B+C

○ ABC*+

○ BC+A*

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

Mark only one oval.

○ Stack

○ Linked list

○ Queue

○ Tree

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

Mark only one oval.

○ front

○ rear

○ back

○ last

34.   26. Dequeue is a process of

Mark only one oval.

⬭ Insertion

⬭ Searching

⬭ Deletion

⬭ Traversal

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

Mark only one oval.

⬭ 0

⬭ 1

⬭ -1

⬭ 2

36.   28. LIFO mean

Mark only one oval.

⬭ 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.

Mark only one oval.

◯ 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?

Mark only one oval.

◯ Array

◯ Linked list

◯ Stack

◯ All of these

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

Mark only one oval.

◯ Structure

◯ Variable

◯ Array

◯ All of these

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

Mark only one oval.

◯ Compile time

◯ Statically

◯ Runtime

◯ Any time

41. 33. Pop operation in Stack give error when

Mark only one oval.

◯ Stack is empty

◯ When stack is partially filled

◯ Stack is full

◯ Never gives error

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

Mark only one oval.

◯ 48

◯ 50

◯ 45

◯ 41

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

Mark only one oval.

○ First address

○ Base address

○ Start address

○ Last address

44.　36. Index of an array starts with

Mark only one oval.

○ 0

○ 2

○ 1

○ -1

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

Mark only one oval.

○ Stack

○ Linked list

○ Queue

○ List

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

Mark only one oval.

◯ Underflow

◯ Empty

◯ Overflow

◯ Full

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

Mark only one oval.

◯ push

◯ front

◯ rear

◯ circular

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

Mark only one oval.

◯ abcde

◯ adbce

◯ abdce

◯ abedc

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

Mark only one oval.

◯ Null

◯ Next node

◯ Start of the node

◯ Last node

50.   42. Traversing both way is possible in

Mark only one oval.

◯ 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

Mark only one oval.

◯ High priority

◯ Same priority

◯ Low priority

◯ No priority

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

Mark only one oval.

( ) 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

Mark only one oval.

( ) homogenous

( ) heterogeneous

( ) Both (a) &(b)

( ) None of these

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

Mark only one oval.

○ O(n2)

○ O(n)

○ O(log n)

○ O(n log n)

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

Mark only one oval.

○ Insertion

○ Merge

○ Quick

○ Heap

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

Mark only one oval.

○ BST

○ Stack

○ List

○ Queue

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

Mark only one oval.

- ⬭ 3
- ⬭ 2
- ⬭ 4
- ⬭ 5

59. 51. Quick sort follows

Mark only one oval.

- ⬭ 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

Mark only one oval.

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

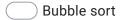61.   53. Merge sort works on the principle of

Mark only one oval.

◯ Divide & conquer

◯ Brute force technique

◯ Greedy algorithm

◯ Dynamic programming

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

Mark only one oval.

◯ 5

◯ 2

◯ 3

◯ 4

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

Mark only one oval.

◯ 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

Mark only one oval.

○ 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

Mark only one oval.

○ Bubble sort

○ Insertion sort

○ Selection sort

○ Quick sort

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

Mark only one oval.

○ arranging

○ inserting

○ sorting

○ searching

67.   59. The complexity of linear searching is

Mark only one oval.

○ O(n2)

○ O(n)

○ O(log n)

○ O(n log n)

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

Mark only one oval.

○ O(n2)

○ O(1)

○ O(log n)

○ O(n log n)