**D.Y. PATIL COLLEGE OF ENGINEERING & TECHNOLOGY**

**22SYAIML204304**

**Q. Paper Code:**

**KASABA BAWADA KOLHAPUR-416006**

**(An Autonomous Institute)**

**S. Y. B. Tech-CSE-AIML(Semester-III)**

**END SEMESTER EXAMINATION, OCT./NOV.- 2021-22**

COURSE NAME: Data Structures COURSE CODE: 201AIMLL204

Seat No :

**Day and Date: Wednesday, 09/02/2022**

**Time: 10.00am to 11.00am Max. Marks- 50**

**OBJECTIVE**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | |  | Correct  Option |
| Q. 1) | Which of the following is the level of implementation of data structure? | | D |
| A) Abstract | B) Application |
| C)Implementation | D)All of the above |
| Q. 2) | Which of the following is true about the characteristics of Abstract data type  I) It exports a type  II)It exports a set of operations | | C |
| A) True, False | B) False, True |
| C)True, True | D)False, False |
| Q.3) | \_\_\_\_\_\_\_is not the component of data structure | | D |
| A) Operations | B) Storage structure |
| C)Algorithm | D)None of the above |
| Q. 4) | The easiest sorting is ........ | | D |
| A) quick sort | B) shell sort |
| C) heap sort | D) selection sort |
| Q. 5) | Finding the location of a given item in a collection of items is called ...... | | C |
| A) Discovering | B) Finding |
| C) Searching | D) Mining |
| Q. 6) | The time complexity of quick sort is ........ | | D |
| A) O(n) | B) O(logn) |
| C) O(n2) | D)O(n logn) |
| Q. 7) | In a stack, if a user tries to remove an element from an empty stack, the situation is called: | | A |
| A) Underflow | B) Empty collection |
| C) Overflow | D) Garbage collection |
| Q. 8) | A queue in which elements get added in empty area in the front of a queue is called \_\_\_\_\_. | | B |
| A) full queue | B) circular queue |
| C) rounded queue | D) rotated queue |
| Q. 9) | Which of the following is an application of stack? | | D |
| A) Finding factorial | B) Reversing of a string |
| C) Infix to postfix | D) All of the above |
| Q. 10) | A linear collection of data elements where the linear node is given by means of pointer is called? | |  |  |
| A) linked list | B) node list  A |
| C) primitive list | D)None of these |
| Q. 11) | In the worst case, the number of comparisons needed to search a singly linked list of length n for a given element is | | D |
| A) log 2 n | B) n/2 |
| C)log 2 n – 1 | D) n |
| Q.12) | In circular linked list, insertion of node requires modification of? | | B |
| A) One pointer | B) Two pointer |
| C)Three pointer | D)None |
| Q. 13) | Linked lists are not suitable to for the implementation of? | | D |
| A) Insertion sort | B) Radix sort |
| C)Polynomial manipulation | D)Binary search |
| Q. 14) | How do you calculate the pointer difference in a memory efficient double linked list? | | B |
| A) head xor tail | B) pointer to previous node xor pointer to next node |
| C)pointer to previous node – pointer to next node | D)pointer to next node – pointer to previous node |
| Q. 15) | Which of the following is not an advantage of trees? | | D |
| A) Hierarchical structure | B) Faster search |
| C)Router algorithms | D)Undo/Redo operations in a notepad |
| Q. 16) | In a full binary tree if number of internal nodes is I, then number of leaves L are? | | B |
| A) L = 2\*I | B) L = I + 1 |
| C)L = I – 1 | D)L = 2\*I – 1 |
| Q. 17) | What is the average case time complexity for finding the height of the binary tree? | | D |
| A) h = O(loglogn) | B) h = O(nlogn) |
| C)h = O(n) | D)h = O (log n) |
| Q. 18) | Which of the following is incorrect with respect to binary trees? | | D |
| A) Let T be a binary tree. For every k ≥ 0, there are no more than 2k nodes in level k | B) Let T be a binary tree with λ levels. Then T has no more than 2λ – 1 node |
| C)Let T be a binary tree with N nodes. Then the number of levels is at least ceil(log (N + 1)) | D)Let T be a binary tree with N nodes. Then the number of levels is at least floor(log (N + 1)) |
| Q. 19) | When in order traversing a tree resulted E A C K F H D B G; the preorder traversal would return | | B |
| A) FAEKCDBHG | B) FAEKCDHGB |
| C)EAFKHDCBG | D)FEAKDCHBG |
| Q. 20) | When converting binary tree into extended binary tree, all the original nodes in binary tree are | | A |
| A) internal nodes on extended tree | B) external nodes on extended tree |
| C)vanished on extended tree | D)None of above |
| Q.21) | What is the number of edges present in a complete graph having n vertices? | | B |
| A) (n\*(n+1))/2 | B) (n\*(n-1))/2 |
| C)n | D) Information given is insufficient |
| Q. 22) | A connected planar graph having 6 vertices, 7 edges contain \_\_\_\_\_\_\_\_\_\_\_\_\_ regions. | | B |
| A)15 | B)3 |
| C)1 | D)11 |
| Q. 23) | Which of the following properties does a simple graph not hold? | | A |
| A) Must be connected | B) Must be unweighted |
| C)Must have no loops or multiple edges | D)Must have no multiple edges |
| Q. 24) | For a given graph G having v vertices and e edges which is connected and has no cycles, which of the following statements is true? | | B |
| A) v=e | B) v = e+1 |
| C)v + 1 = e | D)v = e-1 |
| Q. 25) | Which of the following ways can be used to represent a graph? | | C |
| A) Adjacency List and Adjacency Matrix | B) Incidence Matrix |
| C)Adjacency List, Adjacency Matrix as well as Incidence Matrix | D)No way to represent |

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**Set-: I/II**

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**Answer Key (Objective Questions)**

1. D
2. C
3. D
4. D
5. C
6. D
7. A
8. B
9. D
10. A
11. D
12. B
13. D
14. B
15. D
16. B
17. D
18. D
19. B
20. A
21. B
22. B
23. A
24. B
25. C