



Seat	
No.	

Total No of Pages: 03

Kamala College, Kolhapur
(Autonomous)
B.C.A. (Part-II) (Semester-III)
Examination March/April 2024.
Data Structure using C
Subject Code: CC 317

Day and Date: Friday, 19/04/2024

Total Marks: 80

Time: 12.00 p.m. to 03.00 p.m.

Instructions:

1. *Question 1 and 8 is compulsory.*
2. *Attempt any four questions from Que. No 2 to Que. 7*
3. *Figures to the right indicate total marks for the question.*

Q.1 Multiple choice Questions.

12

- 1) Each Node contain minimum two fields one field called data field to store data. Another field is of type _____.
A) Pointer to Class B) Pointer to an Integer
C) Pointer to Character D) Pointer to Node.
- 2) A linked list in which the last node of Linked list points to the first is called a _____.
A) Doubly Linked List B) Singly Linked List
C) Circular Linked List D) A or B
- 3) Consider linked list is used to implement the Stack then which of the following node is considered as Top of the Stack?
A) Any Node B) Last Node
C) First Node D) None of these
- 4) In the stack, If user try to remove element from the empty stack then it called as
A) Empty Collection B) Underflow of Stack
C) Overflow of Stack D) None of the above

- 5) Which indicates pre-order traversal?
- Left sub-tree, Right sub-tree and root
 - Right sub-tree, root, Left sub-tree
 - Right sub-tree, Left sub-tree and root
 - Root, Left sub-tree, Right sub-tree
- 6) Which of the following sorting algorithm is of divide and conquer type?
- Bubble sort
 - Insertion sort
 - Selection sort
 - Merge sort
- 7) Operation deletion of item from the stack, when stack is not empty is called _____ operation.
- pop
 - push
 - insert
 - delete
- 8) Queue is also called _____.
- FIFO
 - FOLI
 - FILI
 - FILO
- 9) Which of the following is non-linear data structure?
- Stack
 - List
 - Strings
 - Tree
- 10) Finding the location of a given item in a collection of items is called _____.
- Finding
 - Discovering
 - Searching
 - Traversing
- 11) A binary tree in which all its levels except the last, have maximum numbers of nodes, and all the nodes in the last level have only one child it will be its left child. Name the tree. _____
- Threaded tree
 - Complete binary tree
 - M-way search tree
 - Full binary tree.
- 12) Which of the following is the infix expression?
- $A+B*C$
 - $+A*BC$
 - $ABC+*$
 - None of these

Q 2 Explain Data Structure, its type and data Structure operators. 16

Q 3 A) What is Queue? Explain types of queue and queue operations 08
 B) Convert the expression $(A + B) * C + D / (E + F * G) - H$ to equivalent postfix expression using stack 08

Q 4 A) What is tree traversal explain its type inorder, preorder and postorder traversal. 08



B) Evaluate the following arithmetic infix expression using stack. 08

$$10 * (8 + 4) - 6 / 3$$

Q 5 What is Stack? Explain its operations and its static implementation using array in detail. 16

Q 6 A) Solve the following example using Bubble sort. 08

82	42	49	8	25	52	36	93	59
----	----	----	---	----	----	----	----	----

B) Write a note on Selection sort with help of example. 08

Q 7 What is tree Data Structure? Explain the types of tree. 16

Q 8 Write short note on any four of the following. 20

- 1) Doubly linked list.
- 2) Applications of Stack.
- 3) Abstract Data type.
- 4) Linear Search.
- 5) Dynamic memory allocation.
- 6) Adding node into a singly linked list.

