Program: TE   EXTC Engineering

Curriculum Scheme: Revised 2019

Examination: Third Year Semester V

Course Code: ECCDLO 5014 and Course Name: DATA STRUCTURES AND ALORITHM

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	Which of these best describes an array?
Option A:	A data structure that shows a hierarchical behavior
Option B:	**Container of objects of similar types**
Option C:	Arrays are immutable once initialised
Option D:	Array is not a data structure
Q2.	Process of inserting an element in stack is called _____
Option A:	Create
Option B:	**Push**
Option C:	Evaluation
Option D:	Pop
Q3.	In a stack, if a user tries to remove an element from an empty stack it is called _____
Option A:	**Underflow**
Option B:	Empty collection
Option C:	Overflow
Option D:	Garbage Collection
Q4.	Which of the following properties is associated with a queue?
Option A:	First In Last Out
Option B:	**First In First Out**
Option C:	Last In First Out
Option D:	Last In Last Out
Q5.	A linear collection of data elements where the linear node is given by means of pointer is called?
Option A:	**Linked list**
Option B:	Node list
Option C:	Primitive list
Option D:	Unordered list
Q6.	In linked list each node contains a minimum of two fields. One field is data field to store the data second field is?
Option A:	Pointer to character
Option B:	Pointer to integer

Option C:	**Pointer to node**
Option D:	Node
Q7.	The concatenation of two lists can be performed in O(1) time. Which of the following variation of the linked list can be used?
Option A:	Singly linked list
Option B:	Doubly linked list
Option C:	**Circular doubly linked list**
Option D:	Array implementation of list
Q8.	Which of the following statements for a simple graph is correct?
Option A:	**Every path is a trail**
Option B:	Every trail is a path
Option C:	Every trail is a path as well as every path is a trail
Option D:	Path and trail have no relation
Q9.	A connected planar graph having 6 vertices, 7 edges contains _____ regions.
Option A:	15
Option B:	**3**
Option C:	1
Option D:	11
Q10.	What is a dynamic array?
Option A:	**A variable size data structure**
Option B:	An array which is created at runtime
Option C:	The memory to the array is allocated at runtime
Option D:	An array which is reallocated everytime whenever new elements have to be added

Please use either of the 3 option given below while setting up the subjective/descriptive questions

Option 1

Q2.	**Solve any Four out of Six5 marks each**
A	*Define Data structures*
B	*Explain the concept of ADT.*
C	*List the application of various types of queues.*
D	*Explain stack.*
E	*Differentiate singly and doubly linked list*
F	*List the different types of binary trees.*

Option 2

Q3.	**Solve any Two Questions out of Three 10 marks each**

A	*Explain bubble sort algorithm.*
B	*Explain the array implementation of stack.*
C	*Explain in brief the operation on singly and doubly linked list*

Option 3

Q4.	*Please delete the instruction shown in front of every sub question*
A	**Solve any Two** **5 marks each**
i.	*Explain the importance of algorithm.*
ii.	*Differentiate linked list and arrays.*
iii.	*Explain the concept of hashing.*
B	**Solve any One** **10 marks each**
i.	*Write a note on merge sort algorithm.*
ii.	*Explain in brief Breadth First Search, Depth First Search,*