

SUBJECT CODE NO:- P-99
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E.(EC/ECT/IEC/E&C) Examination MAY/JUNE-2016
Data Structure
(Revised)

[Time: Three Hours]

[Max Marks:80]

“Please check whether you have got the right question paper.”

N.B

i) Question 1 and 6 are compulsory.

ii) Attempt any two questions from Q.2 to Q.5 and any two questions from Q.7 to Q.10.

Section A

- Q.1 Solve any 5. 10
- i. Define abstract data types.
 - ii. Define arrays.
 - iii. What is significance of ★ operator in pointers?
 - iv. What is queue?
 - v. What do you mean by circular queue?
 - vi. What is concept of linked list?
 - vii. What are the various operations that can be performed on linked list?
 - viii. Explain malloc() function.
- Q.2 a) Write a program to illustrate array of structures. 07
b) Write a program to declare, initialize and display a 2-d array. 08
- Q.3 a) Explain the concept of infix, postfix and prefix expressions. 07
b) Write a program for representation of stack using arrays. 08
- Q.4 a) How will you add a node at the end of doubly linked list? Explain with a program. 07
b) Explain application of linked list for polynomial manipulation. 08
- Q.5 Write a short note on any three. 15
- i. Pointers
 - ii. Priority queue
 - iii. Circular linked list
 - iv. Comparison of singly, doubly and circular linked list.

Section B

- Q.6 Solve any five. 10
- i. What is directed graph and undirected graph?
 - ii. Define spanning tree.
 - iii. What is incidental edge of a graph?
 - iv. Define root of a tree.
 - v. Define level of a node in tree.
 - vi. Define complete binary tree.
 - vii. List out different sorting algorithms.
 - viii. What is disadvantage of binary searching?

Q.7	a) Explain any shortest path algorithm.	08
	b) Explain any one algorithm to determine a minimum cost spanning tree.	07
Q.8	a) Explain any one application of a tree.	08
	b) Explain methods of tree traversal.	07
Q.9	a) Write a program for sequential search.	07
	b) Explain heap sort with a program.	08
Q.10	Write a short note on <u>any three</u> .	15
	i. DFS	
	ii. Insertion of a node in binary search tree.	
	iii. Searching of a node in binary search tree.	
	iv. Selection sort.	