

FACULTY OF ENGINEERING AND TECHNOLOGY

S.E.(E&C/IE)Examination – Dec-2014

Data Structure (Revised)

[Time: THREE Hours]

[Max. Marks: 80]

"Please check whether you have got the right question paper."

N.B 1)Solve any three questions from each section including Q no. 1 & Q no. 6.

2)Figures to the right indicate full marks.

SECTION A

Q.1	a) Define ADT. b) What is push and pop in stack? c) Explain pointers. d) What is prefix, post fix & infix? e) What is queue? f) Define linked list. g) Explain one dimensional array with example. h) What is a storage classes?	10
Q.2	a) Explain various stack operations.	07
Q.3	b) What is a circular queue? Explain with an example. a) Write algorithm to evaluate post fix expression.	08 07
Q.4	b) Write syntax of following data structure. i. Array ii. Function iii. Structure iv. Pointer	08
Q.5	a) Convert from infix to prefix and post fix $((A + B) * C - (D - E)$(F + 4))$ b) Explain various operations performed on a singly linked list. Write short notes on (any three)	07 15

SECTION B

Q.6	a) Stack and Queue b) Priority Queue c) Type of data structure d) Applications of linked lists.	10
Q.7	a) What is BFS? b) What is weighted graph? c) What is shortest path? d) What is sorting? e) What is out degree of vertex? f) What is bubble sort? g) What is level of Node? h) Define depth of tree.	07
Q.8	a) Explain in-order, pre-order and post -order of tree. b) Write an algorithm for BFS and DFS.	08
Q.9	a) Write a ‘c’ program to sort an array of integers using bubble sort. Show all the stages. 25,57,48,37,12,92,86,33. b) Explain asymptotic notation used in algorithm performance measurement.	08 07
Q.10	a) Explain traversing methods of binary tree. b) Write an algorithm for insertion sort. Write short notes on (any three)	08 07 15
	a) B^+ trees b) Heap sort c) Prim’s algorithm. d) Minimum spanning tree	