CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

Fourth Semester of B.Tech Examination (IT)

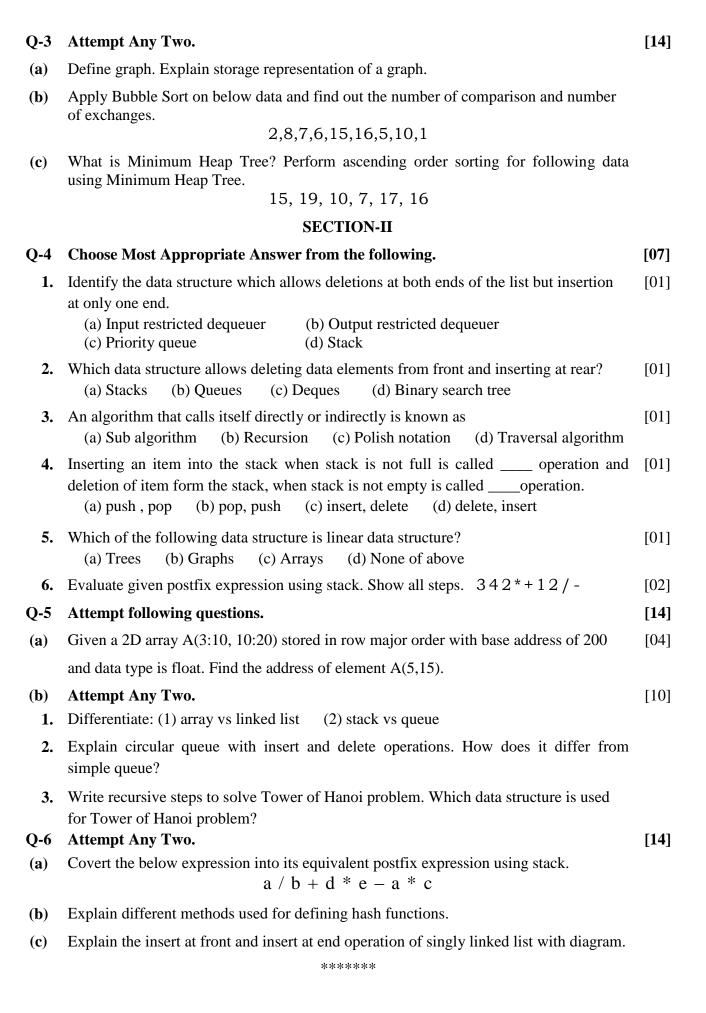
Nov-Dec 2016 IT214 Data Structures and Files

Date: 05.12.2016, Monday Time: 01:30 pm to 04:30 pm Maximum Marks:70

Instru	ıctio	ons:	
		ne question paper comprises of two sections. ection I and II must be attempted in separate answer sheets.	
3.	M	ake suitable assumptions and draw neat figures wherever required.	
		SECTION-I	
Q		Choose Most Appropriate Answer from the following.	[07]
	1.		
		(a) Binary Search Tree (b)Full Binary Tree (c) Threaded Binary Tree (d) Special Pointer Tree	
	2.	Which of the following indicates pre-order traversal? (a) left subtree, right subtree and root (b) right subtree, left subtree and root (c) root, left subtree and right subtree (d) root, right subtree and left subtree	
	3.	To represent hierarchical relationship between elements, which data structure is suitable? (a) Priority queue (b) Tree (c) Graph (d) Stack	
	4.	For a given array of 6 elements [5, 4, 12, 23, 3, 45], how many times comparison is performed to search 23 using linear search algorithm? (a) 4 (b) 2 (c) 5 (d) 3	
	5.	To arrange n elements using selection sort, number of comparisons required (a) n (b) $n \times (n-1)/2$ (c) $n \times (n+1)/2$ (d) $n \times n$	
	6.	Which data structure is used to implement BFS? (a) Stack (b) Queue (c) Tree (d) None of the above	
	7.	A is a binary tree in which every level, except possibly the last, is completely filled, and all nodes are as far left as possible. (a) Binary Search Tree (b) Full Binary Tree (c) Heap Tree (d) Complete Binary Tree	
_	2-2 a)	Attempt the following questions. Define data structure. Explain different types of data structures with suitable example.	[14]
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(1	b)	Answer following questions.(Any Two)	[10]
	1.	Construct the Binary Search Tree using following data. Show each steps. 32, 45, 12, 11, 13, 92, 78, 66, 17, 70, 98, 108. Show its Preorder, Inorder and Postorder traversing sequences.	
	2.	Define the terms : full binary tree, path, isolated node, spanning tree, AVL tree	

103, 12, 150, 1405, 145, 1450, 130, 1045

3. Sort the following data using Radix sort. Trace the algorithm.



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