Bachelor of Computer Application (B.C.A.-II) Fourth Semester BCA243 - Data Structures Paper-III

P. Pages : 2 Time : Three Hours				G/W/18/1111 Max. Marks : 80				
Notes : 1. All o 2. Drav 3. Avo		s: 1. All 2. Dra 3. Ave	questions are compulsory and carry equal marks. we neat and labeled diagram and use supporting data wherever neces oid vague answers and write specific answers related to Questions.	sary.				
1.	a)	Either Define stack	. Explain the different application of stack.	8				
	b)	Write an alg	orithm to convert the infix expression into corresponding postfix exp	pression. 8				
	,		OR					
	c)	What is Rec	ursion? Write different rules for Recursion.	8				
	d)	Explain and	write a recursive algorithm for Tower of Hanoi using single recursive	ve calls. 8				
2.	a)	Either What is Que	eue? Explain the various primitive operations that can be performed of	on Queue. 8				
	b)	Explain circe Queue.	ular Queue: Write an algorithm to count the number of elements in c	ircular 8				
			OR					
	c)	What is dequ	ue? Explain how input restricted deque is used to represent stack.	8				
	d)	Explain abst	ract data type implementation of Queue.	8				
3.	a)	Either Explain the	need of linked list. Write a difference between linked list and array.	8				
	b)	Write an alg	orithm to check the contents of two list are identical or not.	8				
		OR						
	c)	Write an alg a singular lis	orithm to Find the maximum, sum and average value of all the nodes st.	s stored in 8				
	d)	Define doub	ly Linked List. Write a difference between single and doubly linked	list. 8				
4.	a)	Either Using suitab 1) Depth o 2) Degree 3) Path	ble tree explain following terms. of tree of node	8				

4) Full binary tree.

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OR

- c) Define Graph. Explain and write Warshall's algorithm.
- d) Find and print all the nodes reachable From the node. A, For the following directed graph sing Depth First search.



5. Attempt all the Questions.

a)	Write short note on recursive algorithm.	4
b)	Discuss in short priority queue.	4
c)	Write short note on circular linked list.	4
d)	Explain in short about Directed graph.	4

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