Duration: 3 Hours   Oct. 2017   **Total Marks: 100**

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Q-1	(A)	What is Data Structure? Explain Primitive and Non – Primitive type of Data Structure.	[10]
Q-1	(B)	Explain logical & control structure of an algorithm.	[10]

OR

Q-1	(A)	What is an algorithm analysis? Explain time & space complexity with example.	[10]
Q-1	(B)	What is sparse matrix? Explain types of sparse matrix with example.	[10]

Q-2	(A)	How does insertion sort work? Explain with example and algorithm.	[10]
Q-2	(B)	Explain shell sort technique and its algorithm.	[10]

OR

Q-2	(A)	Write down the algorithm of merge sort.	[10]
Q-2	(B)	Write down the algorithm of quick sort.	[10]

Q-3	(A)	What is Linked List? Explain types of Linked List with its advantages & disadvantages.	[10]
Q-3	(B)	What is queue? How does circular queue work? Explain with example.	[10]

OR

Q-3	(A)	What is stack? Explain stack operations using array.	[10]
Q-3	(B)	Explain double ended queue with example.	[10]

Q-4	(A)	Explain tree all its types and terminologies.	[10]
Q-4	(B)	Explain graph traversal methods with example.	[10]

OR

Q-4	(A)	Explain sequential representation of graph.	[10]
Q-4	(B)	What is binary tree? Write a note on binary tree traversal.	[10]

Q-5	(A)	Write a detail note on Magnetic tape.	[10]
Q-5	(B)	Write a detail note on keys	[10]

OR

Q-5	(A)	Write a note on Magnetic Disk.	[10]
Q-5	(B)	Explain Field, record, and file.	[10]