Total No.	of Questions : 4] SEAT No. :
PA-429	
	[5931]-37
S.E. (Information Technology)	
DATA STRUCTURES AND ALGORITHMS	
(2019 Pattern) (Semester - I) (214443)	
Time: 1 H	
	ns to the candidates:
	All questions are compulsory. Figures to the right indicates full marks.
	Draw well labeled diagram wherever necessary.
Q1) a)	Explain following Data Structures with examples for each. [6]
	i) Linear & Non-linear ii) Persistent & Epheneral
b)	Discuss with examples time complexity & space complexity of an
ŕ	algorithm. [6]
c) \	Enlist differences between Data & Data Object. [3]
	ORO
Q2) a)	In a matrix of order 5×5 , having base address 6500, for storing
Q2) a)	characters, compute the address of element of stored at 4 th row and 3 rd
	column. (Say if the array is alpha [5][5], then find address of alpha [4][3]).
	Use column-major method. [8]
b)	Discuss how frequency count is used to study time complexity. [4]
c)	Write Sudo code to add an element at near end in singly circular list [3]
,	
()2) ()	Enlist & Explain aborestarties of sorting algorithms
Q3) a)	Enlist & Explain charactertics of sorting algorithms. [4]
b)	Discuss with examples Quick sort & Merge sort algorithms. [8]
(c)	Explain with example difference between linear search & binary search. [3]
	OR
Q4) a)	Demonstrate how Quick sort is performed on following set of no.s
	50, 70, 45, 68, 30, 90, 20, 79

Explain time complexitier of following sorting algorithms.

i) Insertion sort ii) Shell sort Write sudo code for fibonacci search. c)

b)

[4]

[3]