SARDAR PATEL UNIVERSITY
Programme & Subject: M.Sc – Information Technology (Integrated)
Semester: VII
Syllabus with Effect from: June-2015

Paper Code: PS07CIIT02	Total Credit: 4
Title Of Paper: Analysis and Design of Algorithms	

Unit	Description in Detail	Weightage (%)
I	**Review of Data Structures** Stacks, queues, linked lists, trees, graphs, heaps and sets along with important operations on it Concepts in algorithm analysis, asymptotic complexity	25%
II	**Divide and Conquer** The general method Binary search, Finding maximum, minimum Merge sort, Quick sort Strassen's matrix multiplication	25%
III	**Greedy Method** General method Optimal storage in tape, Knap sack Job sequencing with deadlines Spanning trees, Shortest paths	25%
IV	**Dynamic Programming.** General method Multistage graphs Optimal binary search trees ,0/1 knapstack, Travelling salesman problem	25%

Basic Text & Reference Books:-

- Horowitz, Ellis & Sahni, Sartaj : Fundamental of data structures, computer science Press ,Potomac maryland, 1976.
- Aho, A. V., Hopcroft, J. E., Ullman J. D. : The Design and Analysis of Computer Algorithms, Addision-Wesley Pub. Co., 1974.
- Horowitz Ellis & Sahni Sartaj : Fundamentals of Computer Algorithms, Galgotia Pub. Pvt. Ltd., New Delhi, 1993.
- Goodman, S. E. & Hedetnieni, : Introduction to the Design and Analysis of Algorithms, McGraw-Hill Book Comp., 1977.
- Kunth. D. E. : Fundamentals of Algorithms : The Art of Computer Programming Vol. 1, Narosa Pub. House, 1985.