BHARATIYA VIDYA BHAVAN'S

SARDAR PATEL INSTITUTE OF TECHNOLOGY

MUNSHI NAGAR, ANDHERI (WEST), MUMBAI – 400 058, India
(Autonomous College Affiliated to University of Mumbai)

Mid Semester Examination

Max. Marks: 30 — Duration: 1 hr. 30 min
Class: SYMCA — Semester: IV
Course Code: MCA43 — Date: 14/03/2018
Subject: Design and Analysis of Algorithms — Time:

Instructions:
(1) All questions are compulsory.
(2) Use of scientific calculator is allowed.
(3) Assume any necessary data but justify the same.

Q. No.		Max. Marks	CO
Q. 1	What is a Recursion? Write a routine to calculate Fibonacci series using it.	2+3	CO1
Q. 2	Compare and contrast P and NP problems.	5	CO1
Q. 3	Explain the Roles of Algorithms in Computing.	5	CO1
Q. 4	Derive the time complexity of Merge sort Algorithm. OR Consider the string1: ABCDMZ, String2: ACABDZ. Find Longest Common Subsequence with its length.	5	CO2
Q. 5	The knapsack can hold 60 pounds find the optimal solution using Greedy Method.	5	CO2
Q. 6	Find the minimum cost of chain Matrix Multiplication, where the chain is [2 3 6 4]. Which technique would you suggest to give minimum cost?	4+1	CO2

Items	w_i	v_i
Item1	5 pounds	30$
Item2	10 pounds	20$
Item3	20 pounds	100$
Item4	30 pounds	90$
Item5	40 pounds	160$