

Reg.No. _____



Karunya UNIVERSITY

(Karunya Institute of Technology & Sciences)
(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – Nov/Dec – 2016

Code : 14CS2001
Sub. Name : Analysis of Algorithm

Semester : 2016-17 ODD
Duration : 3hrs
Max. marks : 100

ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)

Q. No.	Sub Div.	Questions	Course Outcome	Marks
1.		Explain with an example worst-case, best-case, and average-case efficiencies of an algorithm.	CO2	20
(OR)				
2.	a.	Write the recursive algorithm for solving Tower of Hanoi problem and analyze the worst case time complexity.	CO2	12
	b.	Write an algorithm to perform matrix operation and find its time efficiency.	CO2	8
3.		Write the quick sort algorithm and apply the input 25, 13, 11, 29, 81, 62, 54, 67 on the algorithm and show each step. Analyze the best case.	CO2	20
(OR)				
4.	a.	Write the algorithm for selection sort and find its worst case time complexity.	CO2	10
	b.	Write the algorithm for bubble sort and analyze the worst case time complexity.	CO2	10
5.		Discuss Depth-First search algorithm in detail with example.	CO1	20
(OR)				
6.	a.	What is an AVL tree?	CO1	3
	b.	Define balance factor of an AVL tree	CO1	3
	c.	Illustrate the four rotation types in AVL tree with examples.	CO1	4
	d.	Construct an AVL tree for the list 51, 62, 83, 34, 25, 46, 77, 18.	CO1	10
7.		Explain briefly about Warshall's algorithm with a suitable example.	CO1	20
(OR)				
8.		Explain Floyd's Algorithm for the all-pairs shortest-paths problem with suitable example.	CO1	20
<u>Compulsory:</u>				
9.	a.	What is a minimal spanning tree?	CO1	5
	b.	Explain Kruskal's algorithm for constructing a minimal spanning tree with suitable example.	CO1	15

ALL THE BEST