Total No. of Printed Pages:02

SUBJECT CODE NO: E-8178
FACULTY OF ENGINEERING AND TECHNOLOGY
M.E. (Comp.Sci. & Engg.) Examination Nov/Dec 2017
Advanced Algorithm
(Revised)

[Time: Three Hours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B 1) Assume any two questions from each section.

Section A

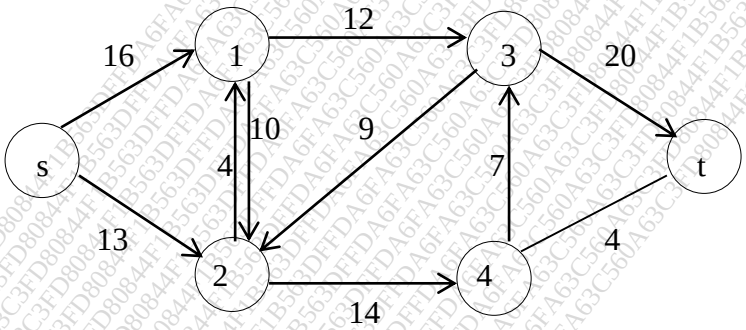
Q.1 a) Define and explain the various asymptotic notations with related graphs and examples. 10

b) Solve the following recurrence relation to give a tight upper bound using substitution method. 10

$T(n) = 4\,T\left(\frac{n}{2}\right) + n^2$

Q.2 a) Explain Hiring problem using Probabilistic analysis and randomized algorithm. 10

b) Solve Maximum flow problem for the following graph. 10



Q.3 a) Sort the following element using heap sort and comment on the complexity. 10
25,67,56,32,12,96,82,44

b) Explain maximum sub array problem using divide and conquer method. 10

Section B

Q.4	a)	Find the position tree for abababa$	06
	b)	Explain Euclid's GCD algorithm.	06
	c)	Explain naive string matching algorithm.	08
Q.5	a)	Draw a state transition diagram of finite automata for the following regular expression over the alphabet I = { a,b,c } i) bc* (abc + b)a* ii) (a +bc*) ab (bb + cc)	12
	b)	Explain vertex – cover problem.	08
Q.6	a)	Prove that clique is NP- complete.	07
	b)	Explain Hamiltonian cycle.	05
	c)	Discuss iterative FFT.	08