CODE NO:- Z-260

FACULTY OF ENGINEERING & TECHNOLOGY
B.E (CSE) Year Examination - June – 2015
Advanced Algorithms
(Old)

[Time: Three *Hours*]   [Max. Marks:100]

"Please check whether you have got the right question paper."
i) Solve <u>any three</u> from each section.

SECTION-A

Q.1 a) How to measure performance of an algorithm. Explain with an algorithm.   08
     b) Explain extended Euclid's algorithm .with an example   08

Q.2 a) Given following point, find the polynomial using lagrange's method.(0,5) (1,10) (2,21) (3,38).   08
     b) Represent the polynomical using $7x^3 + 5x^2 + 6x + x + y,$ 08
         1. Horner's rule.
         2. Sparse.

Q.3 a) Draw comparison tree to sort 4 numbers.   12
     b) Explain lower bound theory   04

Q.4 a) Explain usage of modular arithmetic with an application .   08
     b) Explain lower bound theory for parallel computation .   08

Q.5   Write short notes (<u>Any three</u>)   18
         a) Hashing .
         b) Euclid's algorithnm
         c) Chinese remainder theorem .
         d) Comparison kee.

SECTION-B

Q.6 a) For the graph below show that clique is directly proportional to vector cause   08
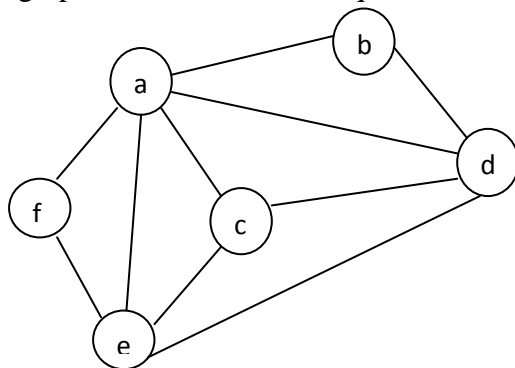
     b) Prove that CHF-SAT reduces to AOG decision problem.   08

Q.7   Prove that DHC is NP- complete for following expression $(x_1 v x_2 v x_3) \cap (\overline{x_1} \, v \, \overline{x_2} \, v x_3)$ 16

Q.8 a) Exlpain absolute approximation algorithm for planar graph coloring problem.   08
     b) Explain approximation algorithm for maximum programs stored problem .   08

Q.9 a) Why do we need parallel algorithm .What are the pros & cons of parallel computing.   08
     b) Explain parallel sorting networks .Draw sorting n/w to produce bitonic sequence .   08

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Q.10   Write short notes (<u>Any three</u>)   18
            a) Probabelistically good algorithms.
            b) Approximation algorithms.
            c) Satisfiability   problem.
            d) NP-hard problems.