

Roll No:

--	--	--	--	--	--	--	--	--	--

B.E/ B.Tech (Full Time) Degree End Semester (Arrear) Examinations, April/May 2012
Industrial Engineering Branch
VIII Semester
IE504 Computational Methods and Algorithms
(Regulations 2004)

30

Time: 3 hour

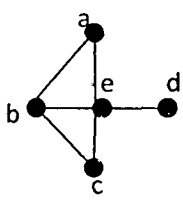
Max Marks: 100

Answer All Questions
Part – A (10 x 2= 20 Marks)

1. What are the main characteristics of static functions?
2. Is there anything wrong with this C++ class declaration?

```
class temp
{
    int value1;
    mutable int value2;
    public :
        void fun(int val)
        const{
            ((temp*) this)->value1 = 10;
            value2 = 10;
        }
};
```

3. What is sub goal design?
4. Give some applications of branch and bound algorithms.
5. Define maximum degree of network
6. Identify the End vertices, Cut vertex and Bridge of the network given below



7. What is the use of complexity analysis of algorithm?
8. What do you mean by space complexity?
9. Give four IE applications that can use hill climbing method to solve the problem.
10. What are the major steps in quick sort algorithm?

Part-B (5 x 16 = 80 marks)

11. Explain in detail with examples the various steps involved in design of algorithms
12. (a). Solve the assignment problem to minimize the cost using Branch and Bound

Technique

Cost Matrix

	Machine->	1	2	3	4
Jobs	1	23	20	21	24
	2	19	21	20	20
	3	20	18	24	22
	4	22	18	21	23

(Or)

12. (b). Write short notes on genetic algorithm and simulated annealing.
13. (a). Give the algorithm and program to convert the adjacent matrix of a network to incidence matrix.

(OR)

13. (b). What is binary tree? Given the incidence matrix, write the algorithm to find whether the tree is binary tree.

14. (a). Explain in detail the procedure and aspects that one should look forward to test the program

(OR)

14. (b) Explain briefly the guidelines for complexity testing.

15. (a). Write the algorithm and program to sort array of given numbers in descending order using bubble sort method.

(OR)

15. (b) Give the flowchart and algorithm for binary searching.