**Subject Name: THEORITICAL FOUNDATIONS OF COMPUTER SCIENCE Time: 9.00A.M-12.00 noon**

**PART-A** (10X 2 = 20 Marks)

1. What is structural induction?

2.What are recursive algorithm?

3.What do you mean by Davis Putnam SAT?

4.Define FOL?

5.Define alpha reduction?

6.Define church rossers theorem-I?

7.Define graph coloring?

8.What is cliques?

9.Define Turing Machine?

10.Define CFG?

**PART-B** (5X16=80 Marks)

11.a. Explain recursive algorithms in detail? (16)

Or

11.b. Explain induction principle in detail?(16)

12.a. Explain in detail about Proportional logic with your own example (16)?

or

12. b.Explain in details about predicate logic with examples?(16)

13.a. Explain in detail about reductions in Lambda calculus? (16)

Or

13.b. Explain functional programming in detail?(16)

14.a. Explain in detail about graph structures in detail? (16)

or

14.b. What are spanning trees? Explain in detail about MST?(16)

15.a. Explain in detail about church thesis? (16)

or

15.b. Explain turing machine of palindrome in detail?(16)