**Assignment Sheet-- I**

Q1. Draw the game tree for Grundy’s game: Two players have in front of them a single pile of objects say stack of 7 pennies . The first players divides the stack in to two unequal pile , second player does the same until all piles of two or one object left . The player who plays last is a winner. Work out the steps of Minimax on it.

Q2. Is the minimax procedure a depth first or a breadth first search procedure?

Justify your answer.

Q3. Discuss the role of adding alpha-beta cutoffs in minimax search through an appropriate example.

Q4. Consider the following sentences:

(i) John likes all kinds of food.

(ii) Apples are food.

(iii) Chicken is food.

(iv) Anything anyone eats and isn’t killed by is food.

(v) Bill eats peanuts and is still alive.

(vi) Sue eats everything Bill eats.

(a) Translate these sentences into formulas in predicate logic.

(b) Prove that John likes peanuts using backward chaining.

(c) Convert the formulas of part (a) into clausal form.

(d) Prove that John likes peanuts using resolution.

Q5. Construct the semantic net representations for the following:

(a) Pompeian (Marcus), Blacksmith (Marcus)

(b) Mary gave the green flowered vase to her favorite cousin.

Q6. (i) Construct partitioned semantic net representation for the following:

(a) Every batter hit a ball.

(b) All the batters like the pitcher.

(ii) Show a conceptual dependency representation of the sentence:

John begged Mary for a pencil.

How does this representation make it possible to answer the question:

Did John talk to Mary?