**Experiment no. 5**

**Aim:** Simplify the following query:

SELECT ENAME, PNAME FROMEMP, ASG, PROJ

WHERE (DUR > 12 OR RESP = "Analyst") AND EMP.ENO = ASG.ENO AND (TITLE = "Elect. Eng." OR ASG.PNO < "P3") AND (DUR > 12 OR RESP NOT= "Analyst") AND ASG.PNO = PROJ.PNO

PROJ.PNO where select and project operations are applied as soon as possible to reduce the size of intermediate relations

**Objective**: To understand and implement the concept of query optimization

**Solution**: For simplification, consider only the compound selection predicate in the WHERE clause:

(DUR > 12∨RESP = “Analyst”)(TITLE = “Elect.Eng.”∨ASG.PNO < “P2”)

(DUR > 12∨RESP NOT = “Analyst”)

Let p1 be DUR > 12,

p2 be RESP = “Analyst”,

p3 be TITLE= “Elect. Eng.”, and

p4 be ASG.PNO < “P2”,

The query qualification is using distributive law

(p1 ∨ p2)(p3 ∨ p4)(p1 ∨ ¬p2)

((p1 ∨ p2)(p1 ∨ ¬p2))(p3 ∨ p4) p1 (p2 ∨ ¬p2))(p3 ∨ p4)

p1 (p3 ∨ 4) or

(DUR > 12)(TITLE = “Elect.Eng.”∨ASG.PNO < “P3”)

which cannot be further simplified.

The first (generic) operator tree is given in following figure .

