Assignment-1

Q. 14 →

{(p.pid, p.pname) | Person(p) ∧ p.city = 'Bloomington' ∧ ∃ w ∈ worksFor (w.pid = p.pid ∧ w.salary ≥ 30000 ∧ w.salary ≤ 50000) ∧ ∃ hm ∈ hasManager (hm.eid = p.pid)}

Q. 15 →

{(p1.pid, p1.pname) | Person(p1) ∧ ¬∃(hm ∈ hasManager ∧ p2 ∈ Person (hm.eid = p1.pid ∧ p2.pid = hm.mid ∧ p2.city = p1.city))}

Q. 16 → {(p.pid, p.pname, w.salary) | Person(p) ∧ worksFor(w) ∧ w.pid = p.pid ∧ ∃ {1 | hasManager(h1) ∧ hasManager(h2) ∧ h1.eid = p.pid ∧ h1.eid = h2.eid ∧ h1.mid ≠ h2.mid and ∃ {1 | personSkill(s1) ∧ personSkill(s2) ∧ s1.pid = h1.mid ∧s2.pid = h2.mid ∧ s1.skill ≠ 'Programming' }}}

Q. 17 → {(w.cname, w.salary) | worksFor(w) ∧ ∀ w1 ∈ worksFor(w.salary ≥ w1.salary ∧ w.cname = w1.cname)}

Q. 18 → ¬∃ m1 (hasManager(m1) ∧ hasManager (m2) ∧ (m1.mid = m2.mid ∧ m1.eid = m2.eid))

Q. 19 → ∃ p ∃ w (person(p) ∧ worksFor (w) ∧ p.pid = w.pid ∧ ¬(∃ m1∃w1 (hasManager(m1) ∧ worksFor(w1) ∧ m1.eid = p.pid ∧ m1.mid = w1.pid ∧ w1.salary ≤ w.salary)))

Q. 20 → {¬∃(w1 w2 ∈ worksFor ∧ m1 ∈ hasManager ∧ w1.pid = m1.eid ∧ m1.mid = w2.pid ∧ w1.cname ≠ w2.cname)}