CS383 Programming Languages

Quiz 10

1. Let Γ = f:X, a:Y and t = f a. Then which one is not a solution for (Γ, t)?

a. X->Y->Nat

b. X->Y->Nat->Nat

c. X->Nat, Y->Nat

d. X->Nat->Nat, Y->Nat

2.Which is wrong about type substitution?

a. If S is any type substitution and G |- e : s, then S(G) |- S(e) : S(s) .
b. T <= S if and only if T = U o S for some U.
c. Any substitution is less general than the identity substitution I.
d. (U o S)(a) = S(U(a))

3. What is the starting state and final state of unification algorithm ?

a. (I, {}); (S, q)

b. (I, q); (S, {})

c. (S, {}); (I, q)

d. (S, q); (I, {})

4. If (S, q) is a stuck state. Then which one can not be q?

a. Int = bool

b. S1->S2 = int

c. a=a->int

d. S1 = S2 -> S2

5. Which rule is used for occur check ?

a. (S,{int=int} U q) -> (S, q) (u-int)

b. (S,{a=a} U q) -> (S, q) (u-eq)

c. (S, {s11 -> s12= s21 -> s22} U q)->(S, {s11 = s21, s12 = s22} U q)

d. (S,{a=s} U q) -> ([a=s] o S, q[s/a]) (a not in FV(s)) (u-var1)

6. Is unification algorithm always terminates?

a. Yes

b. No

7. If (S, q) -> (S’, q’) then T is complete for (S,q) iff T is principal for (S’,q’)

a. Yes

b. No

8. Every final state (S, { }) has a complete solution.

a. Yes

b. No

9. Is a principal solution always a complete solution?

a. Yes

b. No

10. Is a complete solution always a principal solution?

a. Yes

b. No