Started on	Thursday, 24 March 2022, 9:10 AM
State	Finished
Completed on	Thursday, 24 March 2022, 9:18 AM
Time taken	8 mins 21 secs
Marks	2.67/4.00
Grade	**6.67** out of 10.00 (**67**%)

Question **1**

Incorrect

Mark 0.00 out of 1.00

Evaluate the following open untyped lambda term with boolean expressions using call-by-value strategy.

((λx.λy.λz.x) (if y then false else true)) true false

Select one:

○ a. **if y then false else true**

○ b. **if y' then false else true**

○ c. **false**

○ d. **true**

◉ e. None of the above ✗

Your answer is incorrect.

The correct answer is:
if y then false else true

Question **2**

Correct

Mark 1.00 out of 1.00

Match the following normal untyped lambda terms with corresponding nameless representations.

λx. λy. x (λx.y x) | λλ 1 (λ1 0) | ✔

λx. λy. y (λz.x y) | λλ 0 (λ2 1) | ✔

λx. λx. x (λy.y x) | λλ 0 (λ0 1) | ✔

λx. λy. x (λz.y x) | λλ 1 (λ1 2) | ✔

λx. λy. x (λy.y x) | λλ 1 (λ0 2) | ✔

λx. λy. x (λz.y z) | λλ 1 (λ1 0) | ✔

Your answer is correct.

The correct answer is:

λx. λy. x (λx.y x) → λλ 1 (λ1 0),

λx. λy. y (λz.x y) → λλ 0 (λ2 1),

λx. λx. x (λy.y x) → λλ 0 (λ0 1),

λx. λy. x (λz.y x) → λλ 1 (λ1 2), λx. λy. x (λy.y x) → λλ 1 (λ0 2),

λx. λy. x (λz.y z) → λλ 1 (λ1 0)

Question 3

Partially correct

Mark 0.67 out of 1.00

Which of the following terms in untyped lambda calculus with boolean and numeric expressions are **values**?

- ☑ a. (λx.x) false   ✗
- ☑ b. succ (succ (succ 0))   ✓
- ☑ c. false   ✓
- ☐ d. λx.x
- ☑ e. true   ✓
- ☐ f. **if** x **then** false **else** true
- ☐ g. λx.(x false)
- ☑ h. 0   ✓

Your answer is partially correct.

You have correctly selected 4.
The correct answers are:
true,

false,

0,

succ (succ (succ 0)),

λx.x,

λx.(x false)

Question 4

Correct

Mark 1.00 out of 1.00

In untyped lambda calculus, t → t′ and t → t″, it is **always** true that t′ = t″.

Select one:
- ◉ True ✓
- ○ False

See Theorem 3.5.4 of TaPL.

The correct answer is 'True'.

◄ Stage 4. Final Design, Implementation & Presentation — by May 26

Jump to...

Quiz 2 — Mar 30 from 10:50 to 11:00 (10 minutes) ►