CS 7 Midterm Answer Sheet

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Question 1

Question	Interactive Output
A	5 5 None 7
B	1 1 None Error (func &runa> undefined /uncalled)
C	7 None None None
D	2
E	3 3 None
F	5 0 None Error (By computing sub on a non-numeric operand)

F) sub (5, joe (0))

prut (5, prud (0))

← 5
0 Pore

-pw.Sub (5, non-numeral) >Error

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Question 2
Part (a)

func co(co) (P=g)

func λ coco<line5> (P=g)

Global frame

CO	
melon	
mom	14
dad	13

f1: CO   [parent= Global]

mom	15
Return Value	15

func λ : coco <line5> P= g

func λ : coco <line 5> P=f1

f2: melon   [parent= g]

coco	
dd	
Return Value	15

func co (melon) <line 7> P=f1

f3: mom   [parent= f1]

co	
Return Value	15

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Question 2:CONT'D
Part (b)

Global frame

asambe |
ngowani |
no | 3

→ func asambe (nono) [P=g]
→ func ngowani (no) [P=g]

f1: asambe [parent= 5]

nono |
y |
___ | ___
___ | ___

Return Value |

→ func nono (nono) [P=f1]
→ func x:y [P=F1]

f2: ngowani [parent= g]

___ | ___
Return Value | 4

func x:y [P=f2]

f3: nono [parent= f1]

y |
Return Value | 4

f4: _____ [parent=_____]

___ | ___
Return Value |

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Question 3
Part (a)

$\frac{1|2|3}{1|7|7}$ $\longrightarrow$ $\frac{6|6}{7^1|7^0}$ $(1 \times 7^2) + (2 \times 7^1) + (3 \times 7^0)$
$\frac{}{4|7|1}$ $\frac{10^1|10^0}{10|6}$ $= 49 + 14 + 3 = \underline{66}$

66 to base 7 = 123_7
123 to base 10 = 66_{10}

A: O

B: while septimal > 0;

C: septimal % 10

D: curr-digit × (7 ** curr-place)

E: curr-place +1

F: septimal // 10

G:

H:

I:

J:

decimal = 0
curr-place = ___0___
while septimal > 0 ;

    curr-digit = septimal %10
    decimal = curr-digit × 7**curr-place
    curr-place = curr-place +1
    septimal = septimal //10
  return decimal

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Question 3: CONT'D
Part (b)

A. $n \% 10 == forbidden$

B. return forbid_digit (f, n//10)

C. return forbid_digit (f, n)

D. forbid_digit ()

E.

F.

G.

H.

I.

J.

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Question 4
Part (a)

A: __is_lava(start_number) or is_lava(goal_number)__

B: __is_lava(start_number) = False or is_lava(goal_number) = False__

C: __if is_lava(start_number):__

__next_hop (start_number)__

D: ▮▮▮, ▮▮▮, ▮▮▮)

E: __start_number - 1__

F: __num_hops > num_hops + 1__

G:

H:

I:

J:

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Question 4
Part (b)

A: (1, 1, lamdda x : x*2, lamdda x : false)

B:

C:

D:

E:

Question 4
Part (c)

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