Quiz 1 2004-08-2x 45 minutes

NAME _____

ROLL _

This quiz has 2 page/s. Write your answer clearly in the spaces provided and on any last blank page. Do not attach rough work. Use the marks alongside each question for time management. Provide 1–2 sentences of informal justification to qualify for partial credit in case your final answer is wrong. You can use the FWH book and your own class notes only.

- 1. Consider the following expression:

 - (a) This expression will evaluate to what value using the Scheme interpreter?

(b) Now assume applicative order evaluation and dynamic scope. To what value will the above expression evaluate?

2. Consider the following Scheme expression:

(let ((a 0) (f (lambda (x) (set! x 1))))
(begin (f a) a))

(a) What will this evaluate to?

1

1

2

(b) By way of explanation, draw step-by-step diagrams showing the environment and the state of the store as the operations specified in the above expression are completed.



3. Write as short a Scheme expression as you can, without using print statements, to find out whether E_1 or E_2 is evaluated first in the Scheme expression (cons E_1 E_2). Explain how you expect it to do the job.

2

Total: 8