

## 2003 Paper 1 Question 1

### Foundations of Computer Science

(a) Carefully explain the concept of a curried function, with examples. [4 marks]

(b) Explain the purpose and operation of the function `f`:

```
fun foldr f ([], e) = e
  | foldr f (x::xs, e) = f(x, foldr f (xs,e));
```

```
fun f xs =
  foldr (fn ((x,y),(xs,ys)) => (x::xs,y::ys)) (xs, ([],[]));
```

[4 marks]

(c) Write a function that accepts a list and returns the list consisting of its first, second, fourth, fifth, seventh, eighth, tenth, etc., elements. In other words, your function should return all the elements except those whose position in the input list is a multiple of three. [2 marks]