(a) Describe, with examples, how the choice of programming language, programming tools and libraries can affect the reliability of the software developed using them. [5 marks]

(b) Consider the following pair of ML function declarations:

```ml
fun takew p [] = []
  | takew p (x::xs) = if p x then x :: takew p xs else [];

fun dropw p [] = []
  | dropw p (x::xs) = if p x then dropw p xs else x::xs;
```

Prove \((\text{takew} p \ x\ s) @ (\text{dropw} p \ x\ s) = x\ s\) using induction. (Assume that function \(p\) always terminates.) [8 marks]

(c) You have been asked to specify some banking software. A bank account has a balance and an overdraft limit, subject to the constraints \(\text{limit} \geq 0\) and \(\text{balance} + \text{limit} \geq 0\).

(i) Write a Z schema to specify the state of a bank account. [2 marks]

(ii) Write a Z schema for the operation to withdraw a given positive amount from the account. [5 marks]