

6. (a) Explain what is meant by *data-flow analysis*. Illustrate using either *reaching definitions* or *live variables* analysis, and explain how the information flows through the following pseudocode:

```
x := a ;  
if x = b then y := n else z := n ;  
x := x + y ;
```

[13]

- (b) Explain what is meant by each type of translator below and discuss the usefulness of each approach:
- A cross-compiler
 - An interpretive compiler
 - A bootstrapping compiler

[12]