

4. (a) Summarise what is meant by *three-address code* and discuss the difference between triple and quad notations. [5]

- (b) Consider the following code fragment:

```
a = 45 * a + 2 * (a + b);
```

Translate it into three-address code and explain informally the translation process. [6]

- (c) Explain and illustrate the translation of multidimensional arrays, in particular:
- i. The processing of the declaration of an array, such as in Java or C. [7]
 - ii. The translation of an access to an array element into some intermediate representation, assuming a uni-dimensional storage. [7]