

## 2009 Paper 3 Question 1

### Programming in C and C++

Explain *five* of the following C or C++ features. You may use a short fragment of code to complement your explanation.

- (a) The declaration of a C++ class illustrating constructor, variable, and method
- (b) The use of a virtual destructor
- (c) The difference between `malloc()` & `free()`  
and  
`new` & `delete`
- (d) Overloading an operator
- (e) Pointer arithmetic
- (f) Catching and throwing exceptions including the passing of a user-defined structure
- (g) The meaning of the keywords `static` and `const`

[4 marks each]