4 Object-Oriented Programming (RKH)

(a) Give four advantages of Java’s checked exceptions over return values for error indication. [4 marks]

(b) Comment on the appropriate use of Java’s checked exceptions within public, protected and private methods. [6 marks]

(c) Consider a method that can encounter at least two errors (Error1 and Error2). Compare and contrast the following approaches to providing exceptions for these errors.

(i) throw new MethodError(), where MethodError is a direct subclass of Exception.

(ii) throw new Exception() for both errors.

(iii) throw new MethodError(errortype), where MethodError directly subclasses Exception and contains state recording which error occurred (initialised by parameter errortype).

(iv) throw new Error1() and throw new Error2(), where Error1 and Error2 directly subclass MethodException, which directly subclasses Exception.

(v) throw new Exception("Error1") and throw new Exception("Error2").

(vi) throw new Error1() and throw new Error2(), where the classes Error1 and Error2 directly subclass Exception. [10 marks]