

**COMPUTER SCIENCE TRIPOS Part IB – 2012 – Paper 3**

**9 Software Engineering (RJA)**

(a) Describe the following two methodologies as they are used in building safety-critical systems:

(i) *failure modes and effects analysis*;

(ii) *fault tree analysis*.

[3 marks each]

(b) Describe three cognitive factors that can lead to operator errors in safety-critical systems. [2 marks each]

(c) If the safety of a system depends on correct operator actions, then under what circumstances is fault tree analysis likely to be more or less effective?

[8 marks]