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]