

6 Temporal Logic and Model Checking (MJCG)

In this question assume that p and q are atomic formulae.

- (a) Compare and contrast path formulae and state formulae in temporal logic. [4 marks]
- (b) Describe and contrast the meanings of $F(G p)$ and $AF(AG p)$. [4 marks]
- (c) Describe and contrast the meanings of $G(F p)$ and $AG(AF p)$. [4 marks]
- (d) Write down and justify a temporal logic formula that expresses the property that some state satisfying q is reachable from every state satisfying p . [4 marks]
- (e) Write down and justify a temporal logic formula that expresses the property that no path contains a consecutive sequence of 256 states satisfying p . [4 marks]