Specification and Verification II

Describe the syntax and semantics of Computation Tree Logic (CTL). [4 marks]

Write down CTL formulae expressing the following properties:

(a) if req goes high then it will stay high until ack goes high and then go low on the next cycle [2 marks]

(b) if ever req is high and started is low then eventually error will become permanently high [2 marks]

Briefly describe the main ideas underlying model checking. What is symbolic model checking? [4 + 4 marks]

Compare and contrast the use of a model checker and a theorem prover for formal verification. [4 marks]