GEORGIA INSTITUTE OF TECHNOLOGY
SCHOOL of ELECTRICAL and COMPUTER ENGINEERING

ECE 8813A Spring 2017
Problem Set #2

Assigned: 26-Jan-17
Due Date: 2-Feb-17

Your homework will be due at the *start* of class.

PROBLEM 2.1:

Given: The block diagram for a self checking state machine in Figure 1.

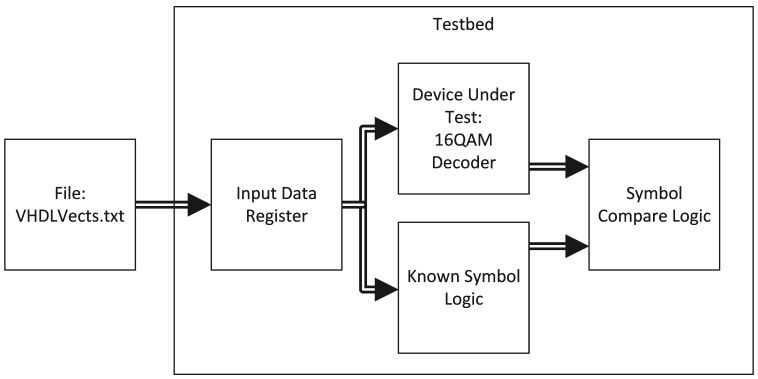

Figure 1: Block Diagram for Self Checking Testbed

The following files from T Square:

(a) `16QAM_real_input.txt` : The real floating point vectors.

(b) `16QAM_imag_input.txt`: The imaginary floating point vectors.

(c) `VHDLVects.txt`: The fixed point input vectors with 16 bits real and 16 bits imaginary in 2.14 format. 2.14 meaning 2 binary places for the whole number and 14 fractional bits. The values have been combined without any breaks of spaces in the file with the real value first and the imaginary value second.

Find: Design a self checking testbed for your 16QAM demapper created in HW1. Use the real world inputs in the files to drive the testbed.

Hint: Some useful functions are: $fopen, $fscanf, $feof, $fclose, $display,