FPGA-THON Problem Statements

Hardware Circuit Design:-

1. Hardware Design (Schematics Design only using ISE 14.7 and below) of 4 bit Signed calculator (+,-,% *) and implementation on SSD
2. Hardware Design (Schematics Design only using ISE 14.7 and below) of Algebraic Equations (example- a^2 + b^2) and implementation on SSD
3. Hardware Design (Schematics Design only using ISE 14.7 and below) of VAP-D(volume, area, perimeter, diagonals) and implementation on SSD
4. Hardware Design (Schematics Design only using ISE 14.7 and below) of ALU (which can perform 32 different operations) and implementation on SSD
5. Hardware Design (Schematics Design only using ISE 14.7 and below) of Digital Clock (Give input 100 mhz) (DAYS : HRS : MIN : SEC) and Stop Watch and implementation on SSD
6. Hardware Design (Schematics Design only using ISE 14.7 and below) of 4 way Traffic Light Control System with option of changing the signal time with respect to heavy traffic and implementation on SSD

   Tool: ISE 14.7

   Board: Nexys

DSP FPGA:-

1. Active white noise cancellation system of audio using fpga
2. Automatic aquarium echo system controller including temperature, humidity and pump control
3. White Gaussian noise generator with mean and variance control in real time (baseband analog output for mixer)

   Tool: Vivado

   Board: Nexys